



Expansion of Hong Kong International Airport into a Three-Runway System

Construction Phase Quarterly EM&A Report
No.27 (1 July to 30 September 2022)

November 2022

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**This Construction Phase Quarterly EM&A Report No. 27 has been
reviewed and certified by**

the Environmental Team Leader (ETL) in accordance with

Section 15.4 of the Updated EM&A Manual

Certified by:



Terence Kong
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date 30 November 2022



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By Email

Airport Authority Hong Kong
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Attn: Mr. Lawrence Tsui, Principal Manager, Environmental Compliance

30 November 2022

Dear Sir,

Contract No. 3102
3RS Independent Environmental Checker Consultancy Services

Quarterly EM&A Report No. 27 (For 1 July 2022 to 30 September 2022)

Reference is made to the Environmental Team's submission of Quarterly EM&A Report No.27 (For 1 July 2022 to 30 September 2022) under section 15.4 of the Updated EM&A Manual, this quarterly EM&A report was certified by the ET leader on 30 November 2022.

We would like to inform you that we have no adverse comment and verify the captioned submission.

Should you have any query, please feel free to contact the undersigned at 3922 9141.

Yours faithfully,
AECOM Asia Co. Ltd.

Roy Man
Independent Environmental Checker

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Abbreviations

3RS	Three-Runway System
AAHK	Airport Authority Hong Kong
AECOM	AECOM Asia Company Limited
AFCD	Agriculture, Fisheries and Conservation Department
AIS	Automatic Information System
ANI	Encounter Rate of Number of Dolphins
APM	Automated People Mover
AW	Airport West
BHS	Baggage Handling System
C&D	Construction and Demolition
CAP	Contamination Assessment Plan
CAR	Contamination Assessment Report
CTCC	Construction Traffic Control Centre
CWD	Chinese White Dolphin
DCM	Deep Cement Mixing
DEZ	Dolphin Exclusion Zone
DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring & Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
EPSS	Emergency Power Supply Systems
ET	Environmental Team
FCZ	Fish Culture Zone
HKBCF	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities
HKIA	Hong Kong International Airport
HSF	High Speed Ferry
IEC	Independent Environmental Checker
LKC	Lung Kwu Chau
MMHK	Mott MacDonald Hong Kong Limited
MMWP	Marine Mammal Watching Plan
MSS	Maritime Surveillance System
MTRMP-CAV	Updated Marine Travel Routes and Management Plan for Construction and Associated Vessel
NEL	Northeast Lantau
NWL	Northwest Lantau
PAM	Passive Acoustic Monitoring
SC	Sha Chau
SCZ	Speed Control Zone
SCLKCMP	Sha Chau and Lung Kwu Chau Marine Park
SS	Suspended Solids
STG	Encounter Rate of Number of Dolphin Sightings
SWL	Southwest Lantau
T2	Terminal 2
The Manual	The Updated EM&A Manual

The Project	The Expansion of Hong Kong International Airport into a Three-Runway System
The SkyPier Plan	Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier
TSP	Total Suspended Particulates
WL	West Lantau
WMP	Waste Management Plan

Executive summary

The “Expansion of Hong Kong International Airport into a Three-Runway System” (the Project) serves to meet the future air traffic demands at Hong Kong International Airport (HKIA). On 7 November 2014, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) for the Project was approved and an Environmental Permit (EP) (Permit No.: EP-489/2014) was issued for the construction and operation of the Project.

Airport Authority Hong Kong (AAHK) commissioned Mott MacDonald Hong Kong Limited (MMHK) to undertake the role of Environmental Team (ET) for carrying out the Environmental Monitoring & Audit (EM&A) works during the construction phase of the Project in accordance with the Updated EM&A Manual (the Manual).

This is the 27th Construction Phase Quarterly EM&A Report for the Project which summarises the monitoring results and audit findings of the EM&A programme during the reporting period from 1 July 2022 to 30 September 2022.

Key Activities in the Reporting Period

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included filling, seawall construction and land-based ground improvement works, together with runway, taxiways, concourse and associated works. Land-based works on existing airport island involved mainly airfield works, Terminal 2 expansion works, modification and tunnel work for Automated People Mover (APM) and Baggage Handling System (BHS), and preparation work for utilities, with activities include road and drainage works, cable ducting, demolition, piling, and excavation works.

EM&A Activities Conducted in the Reporting Period

The EM&A programme was undertaken in accordance with the Manual of the Project. Summary of the monitoring activities during this reporting period is presented as below:

Monitoring Activities	Number of Sessions
1-hour Total Suspended Particulates (TSP) air quality monitoring	96
Noise monitoring	50
Water quality monitoring	37
Vessel line-transect surveys for Chinese White Dolphin (CWD) monitoring	6
Land-based theodolite tracking survey effort for CWD monitoring	6

Environmental auditing works, including weekly site inspections of construction works conducted by the ET and bi-weekly site inspections conducted by the Independent Environmental Checker (IEC), audit of SkyPier High Speed Ferries (HSF), audit of construction and associated vessels, and audit of implementation of Marine Mammal Watching Plan (MMWP) and Dolphin Exclusion Zone (DEZ) Plan, were conducted in the reporting period. Based on the information including ET’s observations, records of Maritime Surveillance System (MSS), and contractors’ site records, it is noted that environmental pollution control and mitigation measures were properly implemented and construction activities of the Project in the reporting period did not introduce adverse impacts to the sensitive receivers.

In accordance with Section 6.2.1.1 of the Manual, the methodology of annual sewage flow monitoring for the existing gravity sewer from the airport discharge manhole to Tung Chung Sewage Pumping Station (TCSPS) should be prepared and submitted to EPD one year before the scheduled commencement of operation of the proposed third runway. As such, the sewage

flow monitoring methodology paper was prepared, submitted and subsequently approved by EPD on 21 June 2021. The annual sewage flow monitoring has also been started since June 2021. According to the daily flow monitoring record of Sewage Pumping Station 1 (SPS-1) located at the Airport from July to September 2022 (see **Appendix C**), the daily average flow of 14,728 m³/day for July 2022, 15,116 m³/day for August 2022 and 12,232 m³/day for September 2022 were well below 80% of pipe full flow capacity of 53,395.2 m³/day as defined in Section 2.6.3 of the approved sewage flow monitoring methodology paper. For the subsequent sets of sewage flow monitoring data for SPS-1, it will be presented in upcoming Quarterly and Annual EM&A Reports.

Snapshots of Good Environmental Practices in the Reporting Period

		
Use of green mesh to minimise soil erosion and surface runoff	Use of solar-lighting along the haul road of construction site	Provision of sedimentation pit for the reuse of treated construction wastewater

Key examples of good site practices implemented in the Project are highlighted as below:

1. Green mesh was placed at the edge of excavation zone to minimise soil erosion and surface runoff.
2. Solar street lights were installed and implemented along the haul road of construction site to reduce energy consumption and provided an eco-friendly lighting service.
3. Sedimentation pit was provided for the storage of treated construction wastewater. All stored wastewater was reused subsequently for dust suppression and other construction activities.

Summary Findings of the EM&A Programme

The monitoring works for construction dust, construction noise, water quality, construction waste, landscape & visual, and CWD were conducted during the reporting period in accordance with the Manual.

Monitoring results of construction dust, construction noise, construction waste and CWD monitoring did not trigger the corresponding Action and Limit Levels in the reporting period.

The water quality monitoring results for all parameters, except dissolved oxygen (DO), obtained during the reporting period were within the corresponding Action and Limit Levels stipulated in the EM&A programme. Relevant investigation and follow-up actions will be conducted according to the EM&A programme if the corresponding Action and Limit Levels are triggered. For DO, some testing results triggered the relevant Action and Limit Levels, and the corresponding investigations were conducted accordingly. The investigation findings concluded that the cases were not related to the Project. To conclude, the construction activities in the reporting period did not introduce adverse impact to all water quality sensitive receivers.

The key findings of the EM&A programme during the reporting period are summarised as below:

	Yes	No	Details	Analysis / Recommendation / Remedial Actions
Breach of Limit Level [^]		√	No breach of Limit Level was recorded.	Nil
Breach of Action Level [^]		√	No breach of Action Level was recorded.	Nil
Complaints received in previous reporting period		√	A complaint regarding dust issue at 3RS construction site was received on 28 June 2022.	ET requested the relevant contractors to provide information related to the complaint. During regular site inspections, dust was observed when there were vehicle movements on haul roads and was rectified by the relevant contractor. A joint site inspection was conducted subsequently in which no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads was wet during the inspection. All contractors were reminded to properly implement dust mitigation measures, especially water spraying at haul roads in accordance the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.
		√	A complaint regarding dust issue at 3RS construction site was received on 28 June 2022.	ET requested the relevant contractor to provide information related to the complaint. During regular site inspections, dust was observed when there were vehicle movements on haul roads and was rectified by the relevant contractor. A joint site inspection was conducted subsequently in which no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads was wet during the inspection. All contractors were reminded to properly implement dust mitigation measures, especially water spraying at haul roads in accordance the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.
		√	A complaint regarding dust issue at 3RS construction site was received on 30 June 2022.	ET requested the relevant contractors to provide information related to the complaint. During regular site inspections, fugitive dust was observed at haul roads and stockpile areas and were rectified by the relevant contractors. A joint site inspection was conducted in which no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads was wet during the inspection. Having said that, at another joint site inspection, fugitive dust was observed at stockpile area and was being rectified by the related contractor. All contractors were reminded to properly implement dust mitigation measures, especially water spraying at haul roads in accordance the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.
Complaint received in this reporting period		√	No construction activities-related complaint was received in this reporting period.	Nil
Notification of any summons and status of prosecutions		√	No notification of summons nor prosecution was received.	Nil
Changes that affect the EM&A		√	There was no change to the construction works that may affect the EM&A.	Nil

Remarks:

[^]Only triggering of Action or Limit Level found related to Project works is counted as Breach of Action or Limit Level.

1 Introduction

1.1 Background

On 7 November 2014, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) for the “Expansion of Hong Kong International Airport into a Three-Runway System” (the Project) was approved and an Environmental Permit (EP) (Permit No.: EP-489/2014) was issued for the construction and operation of the Project.

Airport Authority Hong Kong (AAHK) commissioned Mott MacDonald Hong Kong Limited (MMHK) to undertake the role of Environmental Team (ET) for carrying out the Environmental Monitoring & Audit (EM&A) works during the construction phase of the Project in accordance with the Updated EM&A Manual (the Manual) submitted under EP Condition 3.1¹. AECOM Asia Company Limited (AECOM) was employed by AAHK as the Independent Environmental Checker (IEC) for the Project.

The Project covers the expansion of the existing airport into a three-runway system (3RS) with key project components comprising land formation of about 650 ha and all associated facilities and infrastructure including taxiways, aprons, aircraft stands, a passenger concourse, an expanded Terminal 2, all related airside and landside works and associated ancillary and supporting facilities. The submarine aviation fuel pipelines and submarine power cables also require diversion as part of the works.

Construction of the Project is to proceed in the general order of diversion of the submarine aviation fuel pipelines, diversion of the submarine power cables, land formation, and construction of infrastructure, followed by construction of superstructures.

The summary of construction works programme can be referred to the corresponding Monthly EM&A Reports. Description of relevant contracts in the reporting period was presented in Appendix A of the Construction Phase Monthly EM&A Report No. 81.

1.2 Scope of this Report

This is the 27th Construction Phase Quarterly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 July 2022 to 30 September 2022.

1.3 Project Organisation

The Project's organisation structure is provided in **Appendix A**. Contact details of the key personnel have been updated and provided in **Table 1.1**.

¹ The Manual is available on the Project's dedicated website (accessible at: <http://env.threerunwaysystem.com/en/index.html>)

Table 1.1: Contact Information of Key Personnel

Party	Position	Name	Telephone
Project Manager's Representative (Airport Authority Hong Kong)	Principal Manager, Environmental Compliance, Sustainability	Lawrence Tsui	2183 2734
Environmental Team (ET) (Mott MacDonald Hong Kong Limited)	Environmental Team Leader	Terence Kong	2828 5919
	Deputy Environmental Team Leaders	Heidi Yu	2828 5704
		Ken Wong	2828 5817
Independent Environmental Checker (IEC) (AECOM Asia Company Limited)	Independent Environmental Checker	Roy Man	3922 9376
	Deputy Independent Environmental Checker	Jackel Law	3922 9141

Reclamation Works:

Party	Position	Name	Telephone
Contract 3206 Main Reclamation Works (ZHEC-CCCC-CDC Joint Venture)	Project Manager	Alan Mong	3763 1352
	Environmental Officer	Zhang Bin Wang	3763 1525

Airfield Works:

Party	Position	Name	Telephone
Contract 3302 Eastern Vehicular Tunnel Advance Works (China Road and Bridge Corporation)	Project Manager	Dickey Yau	5699 4503
	Environmental Officer	Dennis Ho	5645 0563
Contract 3303 Third Runway and Associated Works (SAPR Joint Venture)	Project Manager	Andrew Keung	6277 6628
	Environmental Officer	Gabriel Wong	6114 9590
Contract 3305 Airfield Ground Lighting System (ADB Safegate Hong Kong Limited)	Project Manager	Allam Al-Turk	2944 9725
	Environmental Officer	Calvin Sze	9205 9277
Contract 3306 Observation Facility Control System Supporting Interim 2RS and 3RS (Chinney Alliance Engineering Limited)	Project Director	Dennis Yam	9551 9920
	Environmental Officer	Richard Liu	9216 8990
Contract 3307 Fire Training Facility (Paul Y. Construction Company Limited)	Project Manager	Ken Tang	9640 5397
	Environmental Officer	Ferddy Leung	5585 6746
Contract 3308 Foreign Object Debris Detection System (DAS Aviation Services Group)	Project Manager	Jeffrey Yau	9873 7422

Party	Position	Name	Telephone
Contract 3310 North Runway Modification Works (China State Construction Engineering (Hong Kong) Ltd.)	Project Manager	Kingsley Chiang	9424 8437
	Environmental Officer	Federick Wong	9842 2703

Third Runway Concourse:

Party	Position	Name	Telephone
Contract 3402 New Integrated Airport Centres Enabling Works (Wing Hing Construction Co., Ltd.)	Project Manager	Wyman Lau	6112 9753
	Health Safety Environmental Manager	Mike Leung	6625 2550
Contract 3403 New Integrated Airport Centres Building and Civil Works (Sun Fook Kong Construction Limited)	Project Manager	Alice Leung	9220 3162
	Environmental Officer	Ray Cheung	9785 1566
Contract 3404 Integrated Airport Control System (Shun Hing Systems Integration Co., Ltd.)	Project Manager	Andy Ng	9102 2739
	Safety Officer	Keith Chau	9620 7515
Contract 3405 Third Runway Concourse Foundation and Substructure Works (China Road and Bridge Corporation – Bachy Soletanche Group Limited – LT Sambo Co., Ltd. Joint Venture)	Project Manager	Francis Choi	9423 3469
	Environmental Officer	Jacky Lai	9028 8975
Contract 3408 Third Runway Concourse and Apron Works (Beijing Urban Construction Group Company Limited and Chevalier (Construction) Company Limited Joint Venture)	Assistant Project Manager	Qian Zhang	5377 7976
	Environmental Officer	Malcolm Leung	7073 7559

Terminal 2 (T2) Expansion:

Party	Position	Name	Telephone
Contract 3508 Terminal 2 Expansion Works (Gammon Engineering & Construction Company Limited)	Project Director	Richard Ellis	6201 5637
	Environmental Officer	Fanny Law	6184 4650

Automated People Mover (APM) and Baggage Handling System (BHS):

Party	Position	Name	Telephone
Contract 3601 New Automated People Mover System (TRC Line) (CRRRC Puzhen Bombardier Transportation Systems Limited and CRRRC Nanjing Puzhen Co., Ltd. Joint Venture)	Project Manager	Hongdan Wei	158 6180 9450
	Environmental Officer	H Y Yue	9185 8186
Contract 3602 Existing APM System Modification Works (Niigata Transys Co., Ltd.)	Project Manager	Kunihiro Tatecho	9755 0351
	Environmental Officer	Y M Tong	5316 9801
Contract 3603 3RS Baggage Handling System (VISH Consortium)	Project Manager	K C Ho	9272 9626
	Environmental Officer	Richard Ng	9802 9577

Construction Support (Facilities):

Party	Position	Name	Telephone
Contract 3721 Construction Support Infrastructure Works (China State Construction Engineering (Hong Kong) Ltd.)	Senior Project Manager	Thomas Lui	9011 5340
	Environmental Officer	John Mak	6273 8703
Contract 3723 Eastern Support Area – Construction Support Facilities (Tapco Construction Company Limited and Konwo Modular House Ltd. Joint Venture.)	Deputy Project Director	Philip Kong	9337 8700
	Environmental Officer	Eddie Suen	6338 8862
Contract 3728 Minor Site Works (Shun Yuen Construction Company Limited)	Contract Manager	C K Liu	9194 8739
	Environmental Officer	Dan Leung	6856 5899
Contract 3733 Emergency Repair Service (Wing Hing Construction Co., Ltd.)	Project Manager	Michael Kan	9206 0550
	SHE Manager	Mike Leung	6625 2550

Airport Support Infrastructure:

Party	Position	Name	Telephone
Contract 3801 APM and BHS Tunnels on Existing Airport Island (China State Construction Engineering (Hong Kong) Ltd.)	Project Manager	Kingsley Chiang	9424 8437
	Environmental Officer	Eunice Kwok	9243 1331

Party	Position	Name	Telephone
Contract 3802 APM and BHS Tunnels and Related Works (Gammon Construction Limited)	Project Director	John Adams	6111 6989
	Environmental Officer	Phoebe Ng	9869 1105

Construction Support (Services / Licences):

Party	Position	Name	Telephone
Contract 3901A Concrete Batching Facility (K. Wah Concrete Company Limited)	Project Manager	Benedict Wong	9553 2806
	Environmental Officer	C P Fung	9874 2872
Contract 3901B Concrete Batching Facility (Gammon Construction Limited)	General Manager	Gabriel Chan	2435 3260
	Environmental Officer	Rex Wong	2695 6319
Contract 3913 Asphalt Batching Plant (SPR Joint Venture)	Project Manager	Xie Yi Sheng	6580 6005
	Environmental Officer	Kenneth Chan	9300 2182

1.4 Contact information for the Project

The contact information for the Project is provided in **Table 1.2**. The public can contact us through the following channels if they have any queries and comments on the environmental monitoring data and project related information.

Table 1.2: Contact Information of the Project

Channels	Contact Information
Hotline	3908 0354
Email	env@3rsproject.com
Fax	3747 6050
Postal Address	Airport Authority Hong Kong HKIA Tower 1 Sky Plaza Road Hong Kong International Airport Lantau Hong Kong Attn: Environmental Team Leader Mr Terence Kong c/o Mr Lawrence Tsui (TRD)

1.5 Summary of Construction Works

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included filling, seawall construction and land-based ground improvement works, together with runway, taxiways, concourse and associated works. Land-based works on existing airport island involved mainly airfield works, Terminal 2 expansion works, modification and tunnel work for APM and BHS systems, and preparation work for utilities, with activities include road and drainage works, cable ducting, demolition, piling, and excavation works. The locations of the key construction activities are presented in **Figure 1.1**.

1.6 Summary of EM&A Programme Requirements

The status for all environmental aspects is presented in **Table 1.3**. The EM&A requirements remained unchanged during the reporting period.

Table 1.3: Summary of Status for All Environmental Aspects under the Updated EM&A Manual

Parameters	EM&A Requirements	Status
Air Quality		
Baseline Monitoring	At least 14 consecutive days before commencement of construction work	The baseline air quality monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	At least 3 times every 6 days	On-going
Noise		
Baseline Monitoring	Daily for a period of at least two weeks prior to the commencement of construction works	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	Weekly	On-going
Water Quality		
General Baseline Water Quality Monitoring for reclamation, water jetting and field joint works	Three days per week, at mid-flood and mid-ebb tides, for at least four weeks prior to the commencement of marine works.	The baseline water quality monitoring result has been reported in Baseline Water Quality Monitoring Report and submitted to EPD under EP Condition 3.4.
General Impact Water Quality Monitoring for reclamation, water jetting and field joint works	Three days per week, at mid-flood and mid-ebb tides.	On-going for reclamation works. General impact water quality monitoring for water jetting works was completed on 23 May 2017.
Initial Intensive Deep Cement Mixing (DCM) Water Quality Monitoring	At least four weeks	The Initial Intensive DCM Monitoring Report was submitted and approved by EPD in accordance with the Detailed Plan on DCM.
Regular DCM Water Quality Monitoring	Three times per week until completion of DCM works.	Due to the completion of all marine-based DCM works within April 2022, regular DCM monitoring was ceased at all monitoring stations starting from 28 April 2022 and would be resumed if there are marine-based DCM works in the coming future.
Sewerage and Sewage Treatment		
Methodology for carrying out annual sewage flow monitoring for concerned gravity sewer	Methodology to be prepared and submitted to EPD one year before the scheduled commencement of operation of the proposed third runway.	The proposed methodology of the annual sewage flow monitoring was approved by EPD. The annual flow monitoring has been started since June 2021.
Details of the routine H ₂ S monitoring system for the sewerage system of 3RS	Details to be prepared and submitted to EPD at least one year before commencement of the operation of 3RS.	The details of the routine H ₂ S monitoring system will be prepared and submitted to EPD at least one year before commencement of operation of 3RS.
Waste Management		
Waste Monitoring	At least weekly	On-going
Land Contamination		
Supplementary Contamination Assessment Plan (CAP)	At least 3 months before commencement of any soil remediation works.	The Supplementary CAP was submitted and approved by EPD under EP condition 2.20.
Contamination Assessment Report (CAR) for Golf Course	CAR to be submitted for golf course	The CAR for Golf Course was submitted and accepted by EPD.

Parameters	EM&A Requirements	Status
CAR for Terminal 2 Emergency Power Supply System	CAR to be submitted for Terminal 2 Emergency Power Supply Systems	The CARs for Terminal 2 Emergency Power Supply Systems were submitted and accepted by EPD.
Terrestrial Ecology		
Pre-construction Egret Survey Plan	Once per month in the breeding season between April and July, prior to the commencement of HDD drilling works.	The Egret Survey Plan was submitted and approved by EPD under EP Condition 2.14.
Ecological Monitoring	Monthly monitoring during the HDD construction works period from August to March.	The terrestrial ecological monitoring at Sheung Sha Chau was completed in January 2019.
Marine Ecology		
Pre-Construction Phase Coral Dive Survey	Prior to marine construction works	The Coral Translocation Plan was submitted and approved by EPD under EP Condition 2.12.
Coral Translocation	-	The coral translocation was completed on 5 January 2017.
Post-translocation Monitoring	As per an enhanced monitoring programme based on the Coral Translocation Plan	The post-translocation monitoring programme according to the Coral Translocation Plan was completed in April 2018.
Chinese White Dolphins (CWD)		
Baseline Monitoring	6 months of baseline surveys before the commencement of land formation related construction works. Vessel line transect surveys: Two full surveys per month; Land-based theodolite tracking surveys: Two days per month at the Sha Chau station and two days per month at the Lung Kwu Chau station; and Passive Acoustic Monitoring (PAM): For the whole duration of baseline period.	Baseline CWD results were reported in the CWD Baseline Monitoring Report and submitted to EPD in accordance with EP Condition 3.4.
Impact Monitoring	Vessel line transect surveys: Two full surveys per month; Land-based theodolite tracking surveys: One day per month at the Sha Chau station and one day per month at the Lung Kwu Chau station; and PAM: For the whole duration for land formation related construction works.	On-going
Landscape and Visual		
Landscape and Visual Plan	At least 3 months before the commencement of construction works on the formed land of the Project.	The Landscape & Visual Plan was submitted and approved by EPD under EP Condition 2.18
Baseline Monitoring	One-off survey within the Project site boundary prior to commencement of any construction works	The baseline landscape & visual monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.4.
Impact Monitoring	Weekly	On-going
Environmental Auditing		
Regular site inspection	Weekly	On-going
Marine Mammal Watching Plan (MMWP)	Monitor and check	On-going

Parameters	EM&A Requirements	Status
implementation measures		
Dolphin Exclusion Zone (DEZ) Plan implementation measures	Monitor and check	On-going
SkyPier High Speed Ferries (HSF) implementation measures	Monitor and check	On-going
Construction and Associated Vessels implementation measures	Monitor and check	On-going
Silt Curtain Deployment Plan implementation measures	Monitor and check	On-going
Spill Response Plan implementation measures	Monitor and check	On-going
Complaint Hotline and Email Channel	Construction phase	On-going
Environmental Log Book	Construction phase	On-going

Taking into account the construction works in the reporting period, impact monitoring of air quality, noise, water quality, waste management, landscape & visual, and CWD were carried out in the reporting period.

The EM&A programme also involved weekly site inspections and related auditing conducted by ET for the checking of implementation of required environmental mitigation measures recommended in the approved EIA Report. To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period which are summarised as below:

- Fifty-two environmental management meetings for EM&A review with works contracts.

The EM&A programme has been following the recommendations presented in the approved EIA Report and the Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

2 Environmental Monitoring and Auditing

2.1 Air Quality Monitoring

Impact 1-hour Total Suspended Particulates (TSP) monitoring was conducted three times every six days at two representative monitoring stations during the reporting period. The locations of monitoring stations are described in **Table 2.1** and presented in **Figure 2.1**.

2.1.1 Action and Limit Levels

The Action and Limit Levels of the air quality monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are provided in **Table 2.1** for reference.

Table 2.1: Impact Air Quality Monitoring Stations

Monitoring Station	Location	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AR1A	Man Tung Road Park	306	500
AR2	Village House at Tin Sum	298	

2.1.2 Summary of Monitoring Results

The air quality monitoring results in the reporting period are summarised in **Table 2.2** and the graphical plot is presented in **Appendix C**.

Table 2.2: Percentage of Air Quality Monitoring Results within Action and Limit Levels

	AR1A	AR2
Jul 2022	100%	100%
Aug 2022	100%	100%
Sep 2022	100%	100%
Overall	100%	100%

Note: The percentages are calculated by dividing the number of monitoring results within their corresponding Action and Limit Levels by the total number of monitoring results.

All monitoring results were within their corresponding Action and Limit Levels at all monitoring stations in the reporting period.

General meteorological conditions in the last month of the previous quarter and this reporting period were recorded and summarised in **Table 2.3**.

Table 2.3: General Meteorological Condition during Impact Air Quality Monitoring

	Weather	Dominant Wind Direction
Jun 2022	Sunny to Overcast	Southwest
Jul 2022	Sunny to Overcast	Southwest
Aug 2022	Sunny to Rainy	Southeast to Southwest
Sep 2022	Sunny	South to Southwest

2.1.3 Conclusion

No dust emission source was observed at the monitoring stations during the monitoring sessions. As the sensitive receivers were far away from the construction activities, with the implementation of dust control measures, there was no adverse impact at the sensitive receivers attributable to the works of the Project.

2.2 Noise Monitoring

Impact noise monitoring was conducted at four representative monitoring stations once per week during 0700 and 1900 in the reporting period. The locations of monitoring stations are described in **Table 2.4** and presented in **Figure 2.1**.

2.2.1 Action and Limit Levels

The Action and Limit Levels of the noise monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are provided in **Table 2.4** for reference.

Table 2.4: Impact Noise Monitoring Stations

Monitoring Station	Location	Action Level	Limit Level
NM1A	Man Tung Road Park	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)
NM4	Ching Chung Hau Po Woon Primary School		65dB(A) / 70 dB(A) ⁽ⁱ⁾
NM5	Village House in Tin Sum		75 dB(A)
NM6	House No. 1, Sha Lo Wan		75 dB(A)

Note:

⁽ⁱ⁾ The Limit Level for NM4 is reduced to 70dB(A) for being an educational institution. During school examination period, the Limit Level is further reduced to 65dB(A).

2.2.2 Summary of Monitoring Results

The noise monitoring results in the reporting period are summarised in **Table 2.5** and the graphical plot is presented in **Appendix C**.

Table 2.5: Percentage of Noise Monitoring Results within Action and Limit Levels

	NM1A	NM4	NM5	NM6
Jul 2022	100%	100%	100%	100%
Aug 2022	100%	100%	100%	100%
Sep 2022	100%	100%	100%	100%
Overall	100%	100%	100%	100%

Note: The percentages are calculated by dividing the number of monitoring results within their corresponding Action and Limit Levels by the total number of monitoring results.

No complaints were received from any sensitive receiver that triggered the Action Level.

General meteorological conditions in the last month of the previous quarter and this reporting period were recorded and summarised in **Table 2.6**.

Table 2.6: General Meteorological Condition during Impact Noise Monitoring

Weather	
Jun 2022	Sunny to Overcast
Jul 2022	Sunny to Overcast
Aug 2022	Sunny to Rainy
Sep 2022	Sunny

2.2.3 Conclusion

Major sources of noise dominating the monitoring stations observed during the construction noise impact monitoring were traffic noise near NM1A, school activities near NM4, and aircraft noise near NM6. As the sensitive receivers were far away from the construction activities, with the implementation of noise control measures, there was no adverse impact at the sensitive receivers attributable to the works of the Project.

2.3 Water Quality Monitoring

During the reporting period, water quality monitoring was conducted three days per week, at mid-flood and mid-ebb tides. Water quality monitoring was undertaken at a total of 14 water quality monitoring stations, comprising 6 impact (IM) stations, 5 sensitive receiver (SR) stations, and 3 control (C) stations in the vicinity of the water quality sensitive receivers around the existing airport island in accordance with the Manual.

The purpose of water quality monitoring at the IM stations is to promptly capture any potential water quality impacts from the Project before the impacts could become apparent at sensitive receivers (represented by the SR stations). **Table 2.7** describes the details of the monitoring stations. **Figure 2.2** shows the locations of the monitoring stations.

Table 2.7: Monitoring Locations and Parameters for Impact Water Quality Monitoring

Monitoring Station	Description	Coordinates		Parameters
		Easting	Northing	
C1	Control Station	804247	815620	General Parameters DO, pH, Temperature, Salinity, Turbidity, SS
C2	Control Station	806945	825682	
C3 ⁽²⁾	Control Station	817803	822109	
IM1 ⁽⁴⁾	Impact Station	806458	818351	
IM2 ⁽⁴⁾	Impact Station	806236	819183	General Parameters DO, pH, Temperature, Salinity, Turbidity, SS
IM7 ⁽⁴⁾	Impact Station	806835	821349	
IM10 ⁽⁴⁾	Impact Station	809838	822240	
IM11 ⁽⁴⁾	Impact Station	810545	821501	
IM12 ⁽⁴⁾	Impact Station	811519	821162	
SR1A ⁽¹⁾	Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) Seawater Intake for cooling	812660	819977	General Parameters DO, pH, Temperature, Salinity, Turbidity, SS
SR2	Planned marine park / hard corals at The Brothers / Tai Mo To	814166	821463	
SR3	Sha Chau and Lung Kwu Chau Marine Park / fishing and spawning grounds in North Lantau	807571	822147	

Monitoring Station	Description	Coordinates		Parameters
SR4A	Sha Lo Wan	807810	817189	
SR8 ⁽³⁾	Seawater Intake for cooling at Hong Kong International Airport (East)	811623	820390	

Notes:

- (1) With the operation of HKBCF, water quality monitoring at SR1A station was commenced on 25 October 2018. To better reflect the water quality in the immediate vicinity of the intake, the monitoring location of SR1A has been shifted closer to the intake starting from 5 January 2019.
- (2) According to the Baseline Water Quality Monitoring Report, C3 station is not adequately representative as a control station of impact/ SR stations during the flood tide. The control reference has been changed from C3 to SR2 from 1 September 2016 onwards.
- (3) The monitoring location for SR8 is subject to further changes due to silt curtain arrangements and the progressive relocation of this seawater intake.
- (4) With the seawall completion and removal of enhanced open sea silt curtains, these monitoring stations were relocated back to their original locations. For IM2, there was minor adjustment of the monitoring location.

2.3.1 Action and Limit Levels

The Action and Limit Levels for general water quality monitoring stipulated in the EM&A programme for triggering the relevant investigation and follow-up procedures under the programme are presented in **Table 2.8**. The control and IM stations during flood tide and ebb tide for general water quality monitoring are presented in **Table 2.9**.

Table 2.8: Action and Limit Levels for General Water Quality Monitoring

Parameters		Action Level (AL)		Limit Level (LL)	
Action and Limit Levels for general water quality monitoring (excluding SR1A & SR8)					
General Water Quality Monitoring	DO in mg/l (Surface, Middle & Bottom)	Surface and Middle 4.5mg/l		Surface and Middle 4.1mg/l	
		Bottom 3.4mg/l		Bottom 2.7mg/l	
	Suspended Solids (SS) in mg/l	23	or 120% of upstream control station at the same tide of the same day, whichever is higher	37	or 130% of upstream control station at the same tide of the same day, whichever is higher
	Turbidity in NTU	22.6		36.1	
Action and Limit Levels SR1A					
SS (mg/l))		33		42	
Action and Limit Levels SR8					
SS (mg/l)		52		60	

Notes:

1. For DO measurement, Action or Limit Level is triggered when monitoring result is lower than the limits.
2. For parameters other than DO, Action or Limit Level of water quality results is triggered when monitoring results is higher than the limits.
3. Depth-averaged results are used unless specified otherwise.

Table 2.9: The Control and Impact Stations during Flood Tide and Ebb Tide for General Water Quality Monitoring

Control Station	Impact Stations
Flood Tide	
C1	IM1, IM2, IM7, SR3
SR2 ¹	IM7, IM10, IM11, IM12, SR1A, SR3, SR4A, SR8
Ebb Tide	
C1	SR4A

Control Station Impact Stations

C2	IM1, IM2, IM7, IM10, IM11, IM12, SR1A, SR2, SR3, SR8
----	--

Notes:

- As per findings of Baseline Water Quality Monitoring Report, the control reference has been changed from C3 to SR2 from 1 Sep 2016 onwards.

2.3.2 Summary of Monitoring Results

The summary of results within their corresponding Action and Limit Levels in the reporting period are presented in **Table 2.10**. The weather and sea conditions in the last month of the previous quarter and this reporting period were recorded and summarised in **Table 2.11**.

Table 2.10: Percentage of Water Quality Monitoring Results within Action and Limit Levels

	<u>General Water Quality Monitoring</u>			
	DO (Surface and Middle)	DO (Bottom)	SS	Turbidity
Jul 2022	97.5% (199/204)	87.3% (178/204)	100% (252/252)	100% (204/204)
Aug 2022	100% (204/204)	99.5% (203/204)	100% (252/252)	100% (204/204)
Sep 2022	100% (221/221)	100% (221/221)	100% (273/273)	100% (221/221)
Overall	99.2%	95.7%	100%	100%

Notes:

- The percentages are calculated by dividing the number of depth-averaged results complying with their corresponding Action and Limit Levels by the total number of depth-averaged results.
- The number in the bracket under the percentage represents the total number of depth-averaged results complying with their corresponding Action and Limit Levels over the total number of depth-averaged results.

Table 2.11: General Weather Condition and Sea Condition during Impact Water Quality Monitoring

	Weather	Sea Condition
Jun 2022	Sunny to Rainy	Calm to Rough
Jul 2022	Sunny to Rainy	Calm to Rough
Aug 2022	Sunny to Rainy	Calm to Rough
Sep 2022	Sunny to Rainy	Calm to Rough

The monitoring results for all parameters, except dissolved oxygen (DO), obtained during the reporting period were within their corresponding Action and Limit Levels stipulated in the EM&A programme. The detailed monitoring results are presented in **Appendix C**. Relevant investigation and follow-up actions will be conducted according to the EM&A programme if the corresponding Action and Limit Levels are triggered.

For DO, some of the testing results triggered the corresponding Action and Limit Levels in the reporting period, and investigations were conducted accordingly. Summaries of results triggering Action and Limit Levels for DO are presented in **Table 2.12** to **Table 2.15**.

Details of the investigation findings were presented in Construction Phase Monthly EM&A Report No. 79 & 80, which concluded that all results triggering the Action and Limit Levels were not related to the Project.

Table 2.12: Summary of DO (Surface and Middle) Compliance Status (Mid-Ebb Tide)

	IM1	IM2	IM7	IM10	IM11	IM12	SR2	SR3	SR4A
28/07/2022	D								D
30/07/2022									
No. of result triggering Action or Limit Level	1	0	0	0	0	0	0	1	1

Table 2.13: Summary of DO (Bottom) Compliance Status (Mid-Ebb Tide)

	IM1	IM2	IM7	IM10	IM11	IM12	SR2	SR3	SR4A
23/07/2022	D	D							D
26/07/2022	D	D			D				D
28/07/2022	D	D							D
23/08/2022									D
No. of result triggering Action or Limit Level	3	3	2	1	1	0	0	1	4

Table 2.14: Summary of DO (Surface + Middle) Compliance Status (Mid-Flood Tide)

	IM1	IM2	IM7	IM10	IM11	IM12	SR3	SR4A
26/07/2022								
No. of result triggering Action or Limit Level	0	1	0	0	0	0	0	1

Table 2.15: Summary of DO (Bottom) Compliance Status (Mid-Flood Tide)

	IM1	IM2	IM7	IM10	IM11	IM12	SR3	SR4A
23/07/2022							D	
26/07/2022				D			D	
28/07/2022							D	
No. of result triggering Action or Limit Level	2	3	0	1	1	0	3	2

Note: The monitoring results compiled with their corresponding Action or Limit Levels are presented in **Appendix C**.

Legend:	
	Result within corresponding Action and Limit Levels
	Result triggered the Action Level at monitoring station located upstream of the Project based on dominant tidal flow
D	Result triggered the Action Level at monitoring station located downstream of the Project based on dominant tidal flow
	Result triggered the Limit Level at monitoring station located upstream of the Project based on dominant tidal flow
D	Result triggered the Limit Level at monitoring station located downstream of the Project based on dominant tidal flow
	Upstream station with respect to the Project during the respective tide based on dominant tidal flow
	Downstream station with respect to the Project during the respective tide based on dominant tidal flow

2.3.3 Conclusion

During the reporting period, it is noted that most of the monitoring results were within their corresponding Action and Limit Levels, while some results triggered the corresponding Action and Limit Levels, and investigations were conducted accordingly. Based on the findings presented in Construction Phase Monthly EM&A Report No. 79 & 80, the cases that triggered the corresponding Action and Limit Levels were not related to the Project. Hence, the Project did not introduce adverse impact to all water quality sensitive receivers. All required actions under the Event and Action Plan were followed.

Nevertheless, the non-project related trigger was attended to and initiated corresponding action and measures. As part of the EM&A programme, the construction methods and mitigation measures for water quality will continue to be monitored and opportunities for further

enhancement will continue to be explored and implemented where possible, to strive for better protection of water quality and the marine environment.

In the meantime, the contractors were reminded to implement and maintain all mitigation measures during weekly site inspections and regular environmental management meetings. These include maintaining mitigation measures properly for reclamation works including filling, seawall construction and ground improvement works as recommended in the Manual.

2.4 Waste Monitoring

In accordance with the Manual, waste generated from construction activities was audited once per week to determine if wastes were being managed in accordance with the Waste Management Plan (WMP) prepared for the Project, contract-specific WMP, and any statutory and contractual requirements. All aspects of waste management including waste generation, storage, transportation, and disposal were assessed during the audits.

2.4.1 Action and Limit Levels

The Action and Limit Levels of the construction waste are provided in **Table 2.16**.

Table 2.16: Action and Limit Levels for Construction Waste

Monitoring Stations	Action Level	Limit Level
Construction Area	When one valid documented complaint is received	Non-compliance of the WMP, contract-specific WMPs, any statutory and contractual requirements

2.4.2 Summary of Monitoring Results

Weekly monitoring of the Project construction works was carried out by the ET in the reporting period to check and monitor the implementation of proper waste management practices.

Recommendations made by the ET included provision and maintenance of proper chemical waste storage area, as well as handling, segregation, and regular disposal of general refuse. The contractors had taken actions to implement the recommended measures. Waste management audits were carried out by ET according to the requirement of the Waste Management Plan, Updated EM&A Manual and the implementation schedule of the waste management mitigation measures in **Appendix B**.

Based on updated contractors' information, summary of construction waste generated in the reporting period is presented in **Table 2.17**. ET and IEC have carried out site audits regularly and reviewed the trip ticket system.

The contractors have established the recycling strategy for C&D materials with proper planning and design to maximize recycling and reuse. Dedicated recyclers were employed for different kinds of recyclable materials by the contractors. Dedicated areas for sorting of materials are established on site. Recyclable materials such as steel bar, metal strip, aluminium, paper and plastic are sorted on-site and transported off-site for recycling during this reporting period.

Table 2.17: Construction Waste Statistics

	C&D ⁽¹⁾ Material Stockpiled for Reuse or Recycle (m ³)	C&D Material Reused in the Project (m ³)	C&D Material Reused in other Projects (m ³)	C&D Material Transferred to Public Fill ⁽²⁾ (m ³)	Chemical Waste (kg)	Chemical Waste (l)	General Refuse (tonne)
Jul 2022	44,288	4,682	30,029	11,485	0	0	1,953

	C&D ⁽¹⁾ Material Stockpiled for Reuse or Recycle (m ³)	C&D Material Reused in the Project (m ³)	C&D Material Reused in other Projects (m ³)	C&D Material Transferred to Public Fill ⁽²⁾ (m ³)	Chemical Waste (kg)	Chemical Waste (l)	General Refuse (tonne)
Aug 2022	19,018	72,312	2,990	9,006	0	0	1,915
Sep 2022	7,051	77,917	11,226	5,452	240	3,800	1,857
Total	70,357	154,911	44,245	25,943	240	3,800	5,725

Notes:

1. C&D refers to Construction and Demolition.
2. C&D materials not suitable for reuse on-site, including asphalt waste and sediment slurry, were transferred to public fill during the reporting period.

There were no complaints, non-compliance of the WMP, contract-specific WMPs, statutory and contractual requirements that triggered Action and Limit Levels in this reporting period.

2.4.3 Marine Sediment Management

Marine sediment is managed according to the EIA Report, Updated EM&A Manual and Waste Management Plan and the proposal of Further Development on Treatment Level / Details and the Reuse Mode for Marine Sediment (hereinafter referred to as "Further Development Proposal") of the Project. The sampling process, storage conditions of the excavated marine sediment, treatment process, final backfilling location as well as associated records were inspected and checked by ET and verified by IEC to ensure they were in compliance with the requirements as stipulated in the Waste Management Plan and Further Development Proposal.

Sampling works and backfilling works for marine sediment generated from the reclaimed land area were conducted during the reporting period. The details of the marine sediment sampling, treatment and backfilling can be referred to Annual EM&A Reports No.6.

2.5 Chinese White Dolphin Monitoring

CWD monitoring was conducted by vessel line transect survey at a frequency of two full surveys per month, supplemented by land-based theodolite tracking survey and PAM. The frequency of the land-based theodolite tracking survey during the construction phase was one day per month at both Sha Chau (SC) and Lung Kwu Chau (LKC) stations, as stipulated in the Manual. The vessel survey transects followed the transect lines proposed in the Manual and are consistent with those used in the Agriculture, Fisheries and Conservation Department (AFCD) long-term CWD monitoring programme. The transect locations of CWD monitoring by vessel line transect survey are shown in **Figure 2.3**, whilst the land-based theodolite tracking survey stations are described in **Table 2.18** and depicted in **Figure 2.4**. The location of the PAM device is shown in **Figure 2.10**.

Table 2.18: Land-based Theodolite Tracking Survey Station Details

Stations	Location	Geographical Coordinates	Station Height (m)	Approximate Tracking Distance (km)
D	Sha Chau (SC)	22° 20' 43.5" N 113° 53' 24.66" E	45.66	2
E	Lung Kwu Chau (LKC)	22° 22' 44.83" N 113° 53' 0.2" E	70.40	3

2.5.1 Action and Limit Levels

The Action Level and Limit Level for CWD monitoring were formulated by an action response approach using the running quarterly dolphin encounter rates (STG and ANI) derived from

baseline monitoring data, as presented in the CWD Baseline Monitoring Report. The derived values of Action and Limit Levels for CWD monitoring are shown in **Table 2.19**.

Table 2.19: Derived Values of Action Level and Limit Level for Chinese White Dolphin Monitoring

NEL, NWL, AW, WL and SWL as a Whole	
Action Level	Running quarterly STG < 1.86 & ANI < 9.35
Limit Level	Two consecutive running quarterly (3-month) STG < 1.86 & ANI < 9.35

2.5.2 Summary of Monitoring Results

2.5.2.1 Vessel Line Transect Survey

Survey Effort

During the July to September 2022 reporting period, a total of six sets of vessel line transect survey covering all transects in Northeast Lantau (NEL), Northwest Lantau (NWL), Airport West (AW), West Lantau (WL) and Southwest Lantau (SWL) survey areas were conducted at a frequency of twice per month, in each survey area.

A total of around 1,327 km of survey effort was collected from these surveys, with around 98.3% of the total survey effort being conducted under favourable weather condition (i.e. Beaufort Sea State 3 or below with favourable visibility). Details of the survey effort data are presented in **Appendix C**.

CWD Sighting

From July to September 2022, there were a total of 58 sightings of CWD, with 186 dolphins sighted (**Table 2.20**: Summary of Number of CWD Sightings and Number of Dolphins for the Same Quarter Last Year, Previous Quarter, and Current Reporting Period). Amongst these sightings, 57 sightings with 185 dolphins were recorded during on-effort searches under favourable weather condition.

When breaking down the sightings by survey areas, two sightings with three dolphins, 24 sightings with 101 dolphins and 32 sightings with 82 dolphins were recorded in NWL, WL and SWL respectively during the current reporting period. No CWD was sighted in AW transects or NEL survey area.

Compared with the previous quarter (i.e. April to June 2022), both the total number of CWD sightings and total number of the dolphins increased by 29% and 12% respectively. These results were attributed to a notable increase of the dolphin sightings in SWL survey area and increase of the number of dolphins in WL survey area. In contrast, the number of sightings and number of dolphins in NWL decreased slightly from last quarter.

Compared with the same quarter of last year (i.e. July to September 2021), there were increases in both the total number of sightings and the total number of dolphins by 14% and 13% respectively. The most noticeable increase was reflected from the SWL survey area, while decreases in the total number of sightings and the total number of dolphins in NWL survey area were observed.

Table 2.20 below shows the comparison of the numbers of sightings and dolphins amongst the current reporting period, last quarter, and the same quarter of last year.

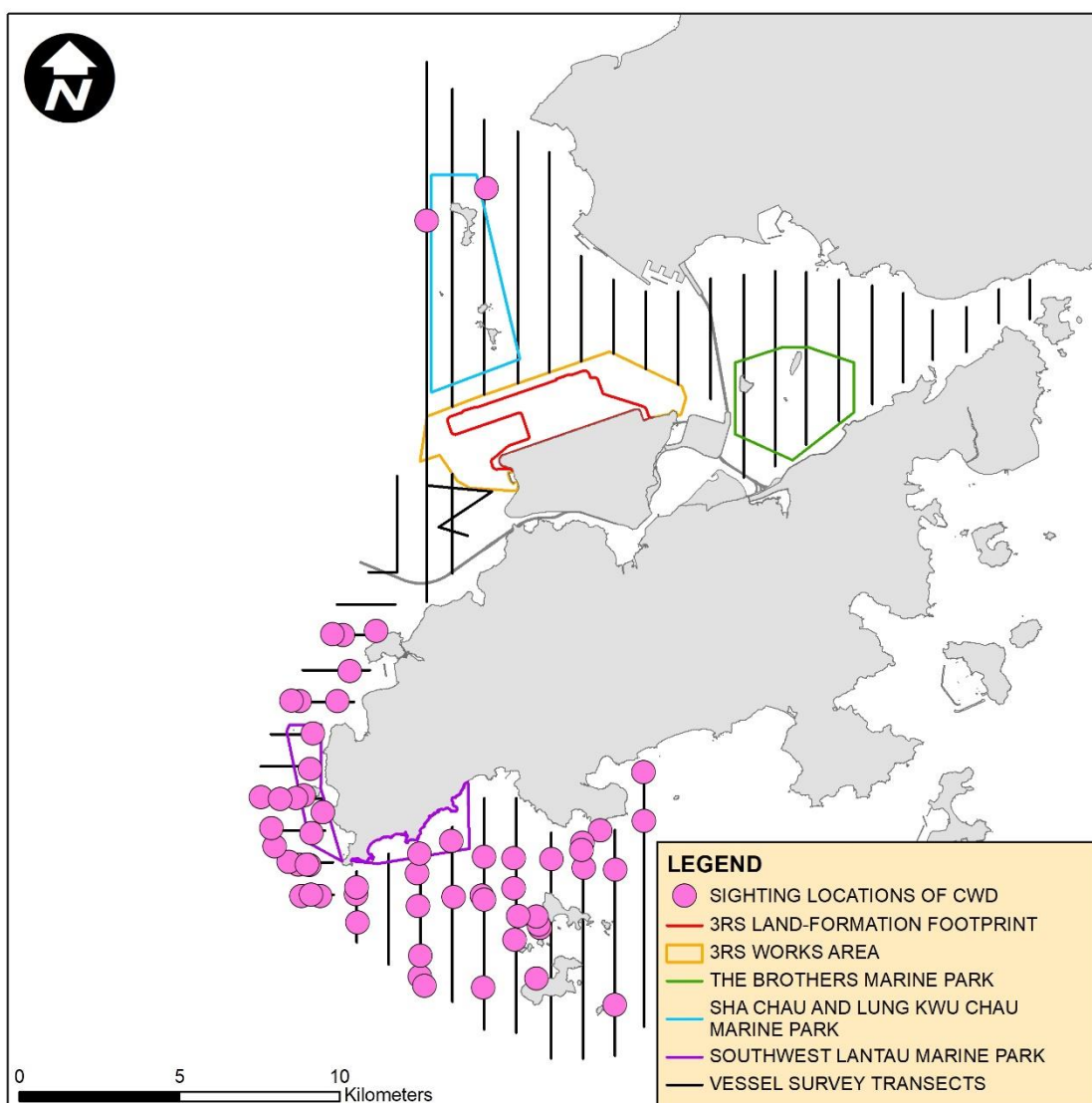
Table 2.20: Summary of Number of CWD Sightings and Number of Dolphins for the Same Quarter Last Year, Previous Quarter, and Current Reporting Period

	Same Quarter of Last Year	Previous Reporting Period	Current Reporting Period
	July to September 2021	April to June 2022	July to September 2022
NEL	0 (0)	0 (0)	0 (0)
NWL	9 (20)	4 (8)	2 (3)
AW	0 (0)	0 (0)	0 (0)
WL	29 (105)	25 (83)	24 (101)
SWL	13 (39)	16 (75)	32 (82)
Total	51 (164)	45 (166)	58 (186)

Note: Values in () represent number of dolphins

The distribution of CWD sightings recorded from July to September 2022 is illustrated in **Figure 2.5**. In NWL, there were CWD sightings recorded near Lung Kwu Chau. In WL, CWD sightings were scattered over the waters from North of Tai O to Fan Lau, with relatively more sightings clustered around Peaked Hill and Fan Lau. In SWL, CWD sightings were scattered amongst the entire survey area. No CWD sightings were recorded in NEL survey area during the reporting period. Details of the sighting data are presented in **Appendix C**.

Figure 2.5: Sightings Distribution of Chinese White Dolphins from July to September 2022



Remarks: (1) Please note that there are 58 pink circles on the map indicating the sighting locations of CWD. Some of them were very close to each other and therefore appear overlapped on this sighting distribution map. (2) Marine park excludes land area and the landward boundary generally follows the high water mark along the coastline.

Encounter Rate

The dolphin encounter rates for the number of on-effort dolphin sightings per 100 km survey effort (STG) and for the total on-effort number of dolphins per 100 km survey effort (ANI) in the whole survey area (i.e. NEL, NWL, AW, WL and SWL) for July, August and September 2022 are summarised in **Table 2.21**.

In this reporting period, both the monthly STG and ANI decreased from July to September 2022 (STG: from 7.24 to 2.32; ANI: from 20.31 to 7.42), causing a similar course in running quarterly STG and ANI. No Action Level for CWD monitoring was triggered during the reporting period.

Compared with the previous reporting period (i.e. April to June 2022), both the running quarterly STG and ANI increased from June to September 2022 (STG: from 3.50 to 4.37; ANI from 12.93 to 14.18). While comparing with the same quarter of last year (i.e. July to September 2021), both the running quarterly STG and ANI increased, from 3.84 to 4.37 and from 12.38 to 14.18

respectively. Encounter rates for these periods are summarised in **Table 2.21** and graphical presentation is provided in **Appendix C**.

Table 2.21: Summary of Monthly and Running Quarterly STG and ANI of Chinese White Dolphin for the Same Quarter Last Year, Previous Quarter, and Current Reporting Period

	Same Quarter of Last Year			Previous Reporting Period			Current Reporting Period		
	Jul 21	Aug 21	Sep 21	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22
Monthly STG	6.84	1.32	3.55	2.00	4.83	3.80	7.24	3.59	2.32
Monthly ANI	21.22	4.19	12.29	4.89	18.36	16.16	20.31	14.82	7.42
Running Quarterly STG	4.39	3.69	3.84	1.93	2.93	3.50	5.30	4.87	4.37
Running Quarterly ANI	12.98	11.32	12.38	7.02	11.19	12.93	18.29	17.07	14.18

Note: For detailed calculations of encounter rates STG and ANI for the current reporting period, please refer to the Construction Phase Monthly EM&A Report Nos. 79, 80, and 81.

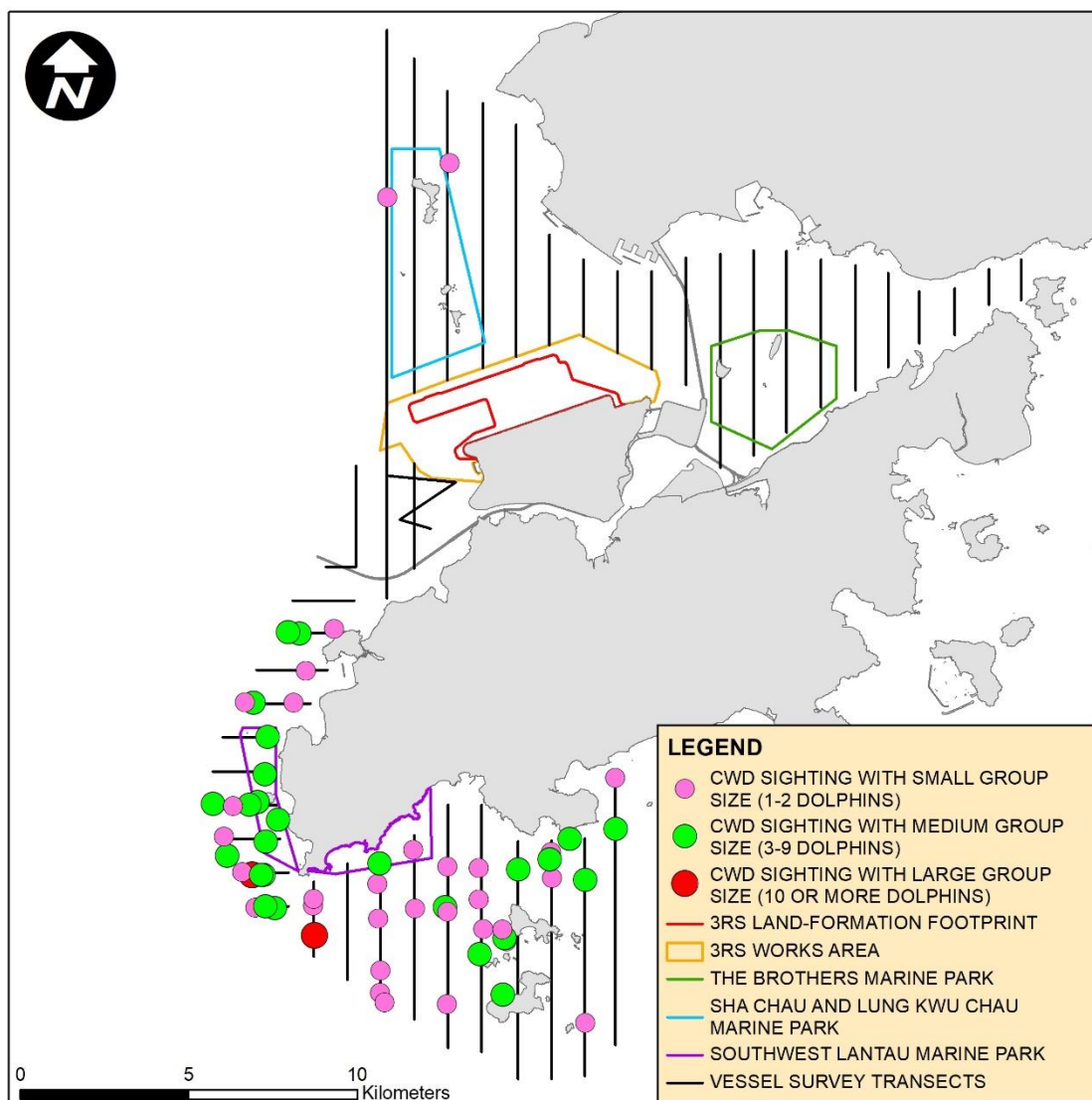
Group Size

Between July and September 2022, the group size of CWD sightings ranged from 1 to 15 dolphins. The average group size of CWD was 3.21 dolphins per group, which is smaller than that of the last quarter (3.69 dolphins per group). The average group size of CWD in this reporting quarter is similar to that of the same quarter of last year (3.22 dolphins per group).

In this reporting quarter, more than half of the CWD sightings are with small group size (i.e. 1-2 dolphins). Amongst the 58 sightings, there were two CWD sightings with large group size (i.e. 10 or more dolphins) recorded in this reporting period. These two large CWD groups were sighted at waters around Fan Lau in both WL and SWL survey areas.

There are no observable differences in the distribution pattern between small-sized and medium-sized dolphin groups in WL as they all scattered. In SWL, the small groups appeared to distribute closer to the western part of survey area while medium groups appeared closer to the Soko Islands and Lo Kei Wan. In NWL, only small-sized dolphin groups were observed. Sighting locations of CWD groups with different group sizes are depicted in **Figure 2.6**.

Figure 2.6: Sighting Locations of Chinese White Dolphins with Different Group Sizes



Remarks: (1) Please note that there are 58 circles on the map indicating the sighting locations of CWD. Some of them were very close to each other and therefore appear overlapped on this sighting distribution map. (2) Marine park excludes land area and the landward boundary generally follows the high water mark along the coastline.

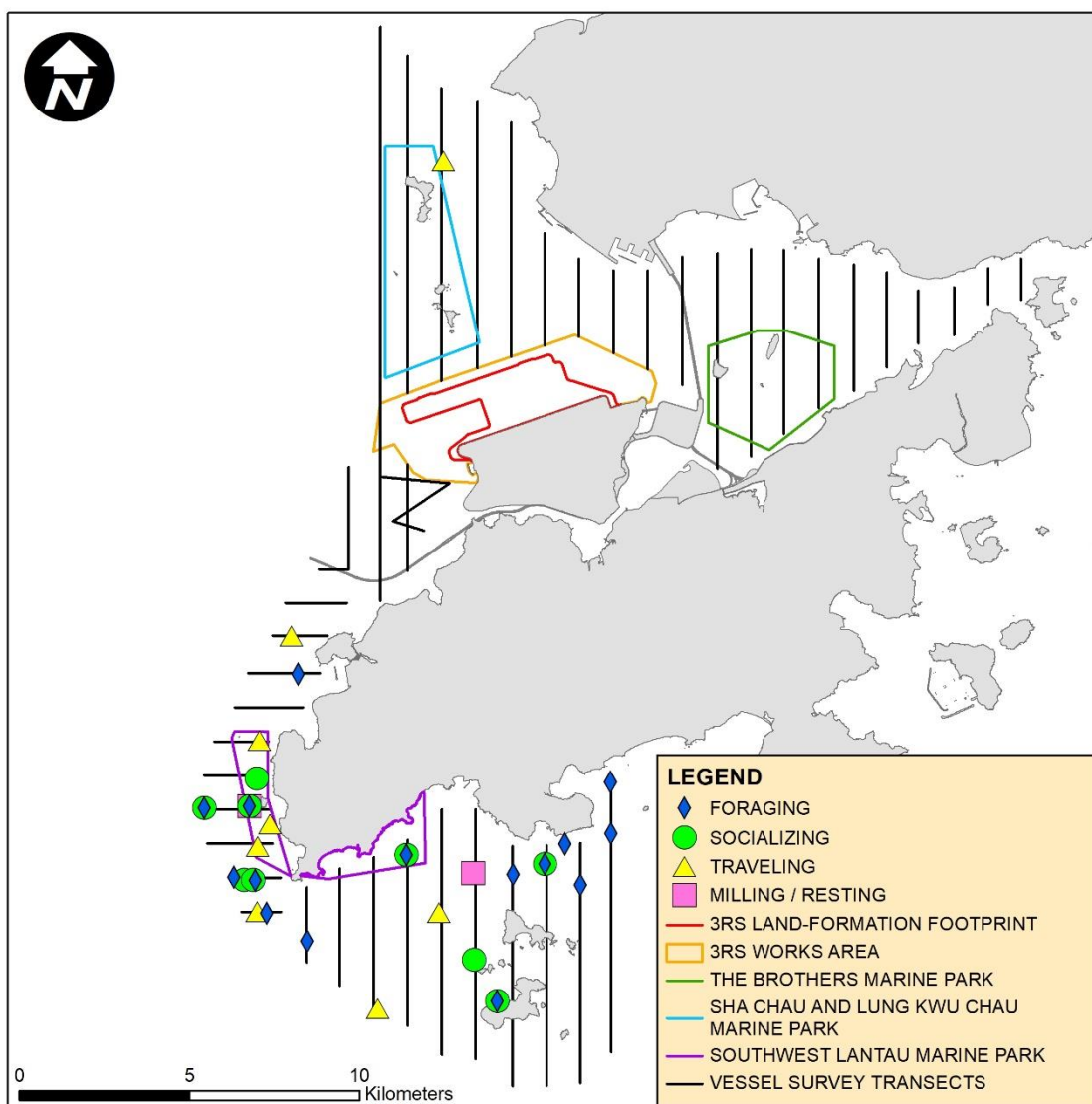
Activities and Association with Fishing Boats

From July to September 2022, 15 sightings of CWD were recorded with foraging activities. Amongst them, four sightings were observed associated with operating purse seiner in SWL survey area.

The number of sightings with foraging recorded in the current reporting period is higher than that in the previous reporting period (i.e. 13 sightings involved foraging activities between April and June 2022). The number of CWD sightings with foraging activities in this reporting period is also slightly higher than that in the same quarter of last year (i.e. 14 sightings between July and September 2021).

The sighting locations of CWDs engaged in different behaviours during the current reporting period are illustrated in **Figure 2.7**.

Figure 2.7: Sighting Locations of Chinese White Dolphins Engaged in Different Behaviours



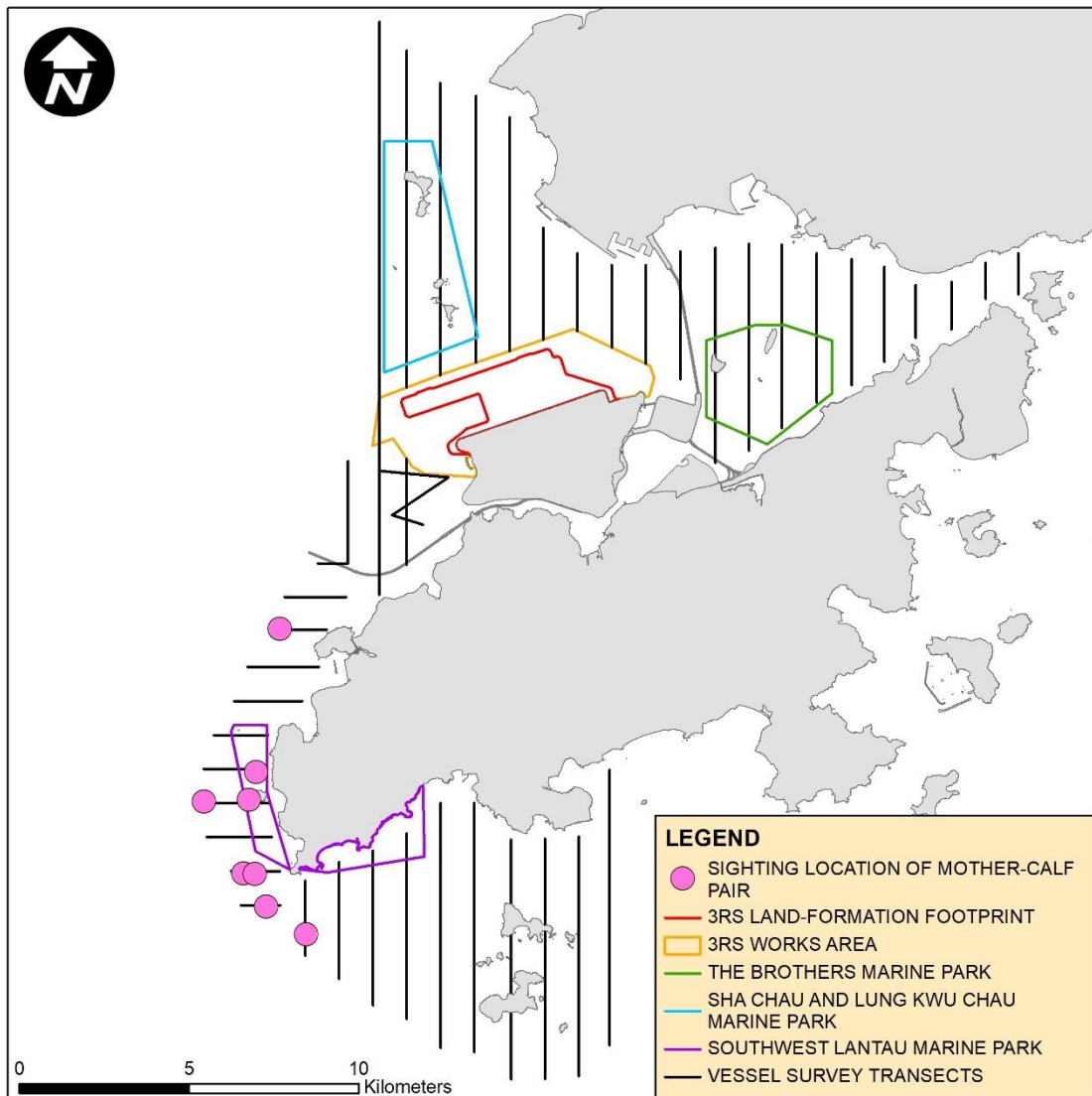
Remarks: Marine park excludes land area and the landward boundary generally follows the high water mark along the coastline.

Mother-calf Pairs

From July to September 2022, eight sightings of CWD were recorded with the presence of mother-and-unspotted juvenile pairs and/or mother-and-unspotted calf pairs observed, which is lower than that recorded in the previous reporting quarter (i.e. 10 sightings between April and June 2022). The number of CWD sightings with the presence of mother-calf pairs is slightly higher than that recorded in the same quarter of last year (i.e. seven sightings between July and September 2021). These eight sightings were recorded in WL and SWL survey areas.

The locations of CWD sightings with the presence of mother-calf pairs are shown in **Figure 2.8**.

Figure 2.8: Sighting Locations of Mother-calf Pairs



Remarks: (1) Please note that there are 8 circles on the map indicating the sighting locations of Mother-Calf pairs. (2) Marine park excludes land area and the landward boundary generally follows the high water mark along the coastline.

Photo Identification

Between July and September 2022, a total number of 57 different CWD individuals were identified altogether for 87 times. Re-sighting information of CWD individuals provides an initial idea of their range use and apparent connection between different areas of Lantau waters. Amongst these 57 different CWD individuals, 19 animals (i.e. NLMM015, NLMM085, SLMM002, SLMM014, SLMM023, SLMM029, SLMM035, SLMM037, SLMM044, SLMM049, WLMM003, WLMM007, WLMM018, WLMM049, WLMM056, WLMM063, WLMM067, WLMM083 and WLMM131) were sighted for more than once.

Eight individuals including SLMM002, SLMM029, SLMM035, SLMM044, SLMM049, WLMM003, WLMM063 and WLMM067 were re-sighted in different survey areas during this reporting period. The most frequently re-sighted individuals in this reporting quarter are SLMM002, SLMM014, SLMM037 and WLMM131, while all of them were successfully identified for four times. The number of CWD individuals re-sighted more than once is as same as that of previous reporting

quarter from April to June 2022, while the number of CWD individuals showing cross-area movement in the current reporting period is lower.

A summary of photo identification works is presented in **Table 2.22**. Representative photos of the 57 identified individuals and figures depicting the sighting locations of the aforementioned eight individuals re-sighted in different survey areas in this reporting period are presented in **Appendix C**.

Table 2.22: Summary of Photo Identification

Individual ID	Date of sighting	Sighting Group No.	Area	Individual ID	Date of sighting	Sighting Group No.	Area
NLMM013	9-Sep-22	2	NWL	WLMM003	11-Jul-22	1	WL
NLMM015	23-Aug-22	2	WL		13-Jul-22	7	SWL
	19-Sep-22	1	WL	WLMM004	2-Aug-22	2	SWL
NLMM016	23-Aug-22	2	WL	WLMM007	23-Aug-22	5	WL
NLMM028	9-Sep-22	2	NWL		19-Sep-22	3	WL
NLMM039	22-Aug-22	2	WL	WLMM018	8-Jul-22	4	WL
NLMM040	22-Aug-22	4	WL		19-Sep-22	2	WL
NLMM058	11-Jul-22	2	WL	WLMM019	11-Jul-22	1	WL
NLMM061	12-Jul-22	15	SWL	WLMM029	23-Aug-22	5	WL
NLMM063	13-Jul-22	6	SWL	WLMM038	8-Jul-22	2	WL
NLMM085	12-Jul-22	3	SWL	WLMM043	20-Sep-22	1	WL
		6	SWL	WLMM047	12-Jul-22	10	SWL
SLMM002	12-Jul-22	2	SWL	WLMM049	12-Jul-22	13	SWL
		4	SWL		13-Jul-22	10	SWL
	13-Jul-22	4	SWL	WLMM052	8-Jul-22	2	WL
	19-Sep-22	3	WL	WLMM056	2-Aug-22	2	SWL
SLMM003	2-Aug-22	1	SWL		3-Aug-22	3	SWL
SLMM014	12-Jul-22	2	SWL		6-Sep-22	12	SWL
		7	SWL	WLMM063	2-Aug-22	2	SWL
	13-Jul-22	3	SWL		23-Aug-22	5	WL
	2-Aug-22	2	SWL	WLMM067	2-Aug-22	2	SWL
SLMM023	23-Aug-22	6	WL		23-Aug-22	2	WL
	19-Sep-22	2	WL			3	WL
SLMM027	11-Jul-22	2	WL	WLMM076	12-Jul-22	13	SWL
SLMM029	12-Jul-22	8	SWL	WLMM079	2-Aug-22	2	SWL
	19-Sep-22	3	WL	WLMM081	11-Jul-22	2	WL
SLMM035	23-Aug-22	5	WL	WLMM083	8-Jul-22	2	WL
	6-Sep-22	12	SWL			3	WL
SLMM037	12-Jul-22	2	SWL	WLMM092	23-Aug-22	2	WL
	2-Aug-22	1	SWL	WLMM109	2-Aug-22	2	SWL
		2	SWL	WLMM114	19-Sep-22	3	WL
	6-Sep-22	12	SWL	WLMM131	12-Jul-22	1	SWL
SLMM044	2-Aug-22	2	SWL			4	SWL
	19-Sep-22	2	WL		6-Sep-22	12	SWL
		3	WL			16	SWL
SLMM049	2-Aug-22	2	SWL	WLMM135	2-Aug-22	2	SWL
	19-Sep-22	2	WL	WLMM151	23-Aug-22	5	WL
SLMM050	13-Jul-22	4	SWL	WLMM164	19-Sep-22	1	WL
SLMM052	2-Aug-22	2	SWL	WLMM176	8-Jul-22	2	WL
SLMM059	23-Aug-22	6	WL	WLMM177	8-Jul-22	1	WL
SLMM060	12-Jul-22	9	SWL	WLMM178	8-Jul-22	2	WL
SLMM074	8-Jul-22	4	WL	WLMM179	11-Jul-22	4	WL
SLMM075	22-Aug-22	4	WL	WLMM180	11-Jul-22	4	WL
SLMM076	22-Aug-22	4	WL				

2.5.2.2 Land-based Theodolite Tracking Survey

Survey Effort

Between July and September 2022, a total of six days of land-based theodolite tracking survey effort were completed, including three days on Lung Kwu Chau and three days on Sha Chau. No CWD group was tracked from the Lung Kwu Chau and Sha Chau stations during the reporting quarter.

Information on survey effort and CWD groups sighted during land-based theodolite tracking surveys are presented in **Table 2.23**. Details on the survey effort and CWD groups tracked are presented in **Appendix C**.

Table 2.23: Summary of Survey Effort and CWD Group of Land-based Theodolite Tracking Survey

Land-based Station	# of Survey Sessions	Survey Effort (hh:mm)	# CWD Groups Sighted	CWD Group Sighting per Survey Hour
July 2022				
Lung Kwu Chau	1	06:00	0	0
Sha Chau	1	06:00	0	0
TOTAL	2	12:00	0	0
August 2022				
Lung Kwu Chau	1	06:00	0	0
Sha Chau	1	06:00	0	0
TOTAL	2	12:00	0	0
September 2022				
Lung Kwu Chau	1	06:00	0	0
Sha Chau	1	06:00	0	0
TOTAL	2	12:00	0	0
OVERALL	6	36:00	0	0

2.5.2.3 Progress Update on PAM

PAM device has been deployed and positioned to the south of Sha Chau island within the SCLKCMP (**Figure 2.10**) to supplement the detection of CWD presence in the south Sha Chau area that are not recorded visually by the land-based theodolite tracking survey and to coincide the theodolite data when there is sighting from the land-based station at Sha Chau. Both C-POD and F-POD are considered as effective PAM devices in detecting CWD occurrence, and F-POD was the main PAM device deployed where feasible. In this reporting period, the F-POD was retrieved on 11 August 2022 for data collection and subsequently re-deployed. As the period of data collection and analysis takes more than four months, PAM results could not be reported in quarterly intervals but report for supplementing the annual CWD monitoring analysis.

2.5.2.4 Site Audit for CWD-related Mitigation Measures

During the reporting period, silt curtains were in place by the contractors for marine filling works, in which dolphin observers were deployed by the contractor in accordance with the Marine Mammal Watching Plan (MMWP). Teams of at least two dolphin observers were deployed at 1 to 3 dolphin observation stations by the contractors for continuous monitoring of the DEZ for seawall construction works in accordance with the DEZ Plan. Trainings for the proposed dolphin observers on the implementation of MMWP and DEZ monitoring were provided by the ET prior to the aforementioned works, with a cumulative total of 704 individuals being trained and the training

records were kept by the ET. From the contractors' DEZ monitoring records, no dolphin or other marine mammals were observed within or around the DEZ in this reporting period. The contractors' records were also audited by the ET during site inspection.

Audits of acoustic decoupling for construction vessels were carried out during weekly site inspection and summarised in **Section 2.7**. Summary of audits of SkyPier HSFs route diversion and speed control and construction vessel management are presented in **Section 2.8** and **Section 2.9** respectively.

2.6 Sewage Flow Monitoring

In accordance with the approved EIA Report (AEIAR-185/2014) for Expansion of Hong Kong International Airport into a Three-Runway System (3RS), the gravity sewer from the airport discharge manhole to TCSPS was recommended to be upgraded by AAHK to cater for the ultimate design sewage flow from the expanded airport. It was recommended in section 6.2.1.1 of the Manual that AAHK should conduct annual monitoring for the sewage flow build-up of the gravity sewer from the airport discharge manhole to TCSPS one year before the scheduled commencement of operation of the proposed third runway. The annual monitoring results shall inform the timing of commencement of the planning of the sewer upgrading works. The sewage flow monitoring methodology paper (the Paper) was prepared, submitted and subsequently approved by EPD on 21 June 2021.

2.6.1 Brief Summary of the Agreed Method

With reference to the Paper, the existing sewer to be monitored is the section between FMH7042035 (reference point A) and FMH7043286 (reference point C). A schematic diagram of the sewage system between reference point A and C is presented in **Figure 2.11**. The locations of these reference points are presented in **Figure 2.12**. To determine if the threshold of 80% of the design capacity is being reached, an approach using the Colebrook-White equation was used.

Two pipe segments between reference points A and C were identified with the lowest flow capacity and therefore selected as the benchmark for comparing the actual sewage flow of the sewers for the flow monitoring:

- Segment 1: for sewage pipelines serving the airport – the critical segment is the 1050mm sewer between manholes FMH7042032 and FMH7042033, where the 80% threshold of full flow capacity is 53,395.2 m³/day; and
- Segment 2: for the sewage pipelines serving the airport and catchment L4 – the critical segment is the 1050mm sewer between manholes FMH7043288 and FMH7043287, where the 80% threshold of full flow capacity is 57,628.8 m³/day.

According to the Paper, segment 1 would reach its 80% full flow capacity before segment 2. Hence, segment 1 was considered the critical segment within the section between reference points A and C, and it was agreed to conduct sewage flow monitoring for segment 1 only. With the daily flow rate of SPS-1, which collects sewage arising from the Airport, is available from AAHK, desk-based flow monitoring would be conducted by comparing the daily average flow rate of SPS-1 (i.e. Q1) against the threshold of 80% of pipe capacity of segment 1 (i.e. 53,395.2 m³/day) in accordance with the following criteria:

- If $Q1 \leq 53,395.2 \text{ m}^3/\text{day}$, planning of sewerage upgrading works can be on hold until results of next annual monitoring; and
- If $Q1 > 53,395.2 \text{ m}^3/\text{day}$, planning of sewerage upgrading works shall be considered to start and annual monitoring shall be discontinued.

Within the monitoring period, if the daily average flow rate of SPS-1 (i.e. Q1) is higher than the threshold of 53,395.2 m³/day, planning of sewerage upgrading works shall be considered to start and the annual monitoring shall be discontinued. The above approach was agreed to be adopted as part of annual monitoring for the sewage flow increment of the concerned gravity sewer in 2021 and 2022.

2.6.2 Desk-Based Monitoring Result

To fulfil the requirements as mentioned in previous section, the annual sewage flow monitoring has been started since June 2021. According to the daily flow monitoring record of SPS-1 from July to September 2022 (see **Appendix C**), the daily average flow of 14,728 m³/day for July 2022, 15,116 m³/day for August 2022 and 12,232 m³/day for September 2022 were well below the above-mentioned threshold of 53,395.2 m³/day. For the subsequent sets of sewage flow monitoring data for SPS-1, it would be presented in upcoming Quarterly and Annual EM&A Reports.

2.7 Environmental Site Inspection

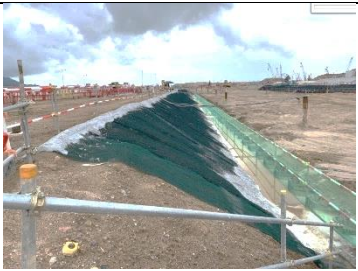


Site inspections of the construction works to audit the implementation of proper environmental pollution control and mitigation measures for the Project were conducted by ET and IEC on a weekly and bi-weekly basis, respectively. Besides, ad-hoc site inspections were also conducted by ET and IEC if environmental problems were identified, or subsequent to receipt of an environmental complaint, or as part of the investigation work. These site inspections provided a direct means to reinforce the specified environmental protection requirements and pollution control measures in construction sites.

During site inspections, environmental situation, status of implementation of pollution control and mitigation measures were observed. Environmental documents and site records, including waste disposal record, maintenance record of environmental equipment, and relevant environmental permit and licences, were also checked on-site. Observations were recorded in the site inspection checklist and passed to the contractor together with the appropriate recommended mitigation measures where necessary in order to advise contractors on environmental improvement, awareness and on-site enhancement measures. The observations were made with reference to the following information during the site inspections:

- The EIA and EM&A requirements;
- Relevant environmental protection laws, guidelines, and practice notes;
- The EP conditions and other submissions under the EP;
- Monitoring results of EM&A programme;
- Works progress and programme;
- Proposal of individual works;
- Contract specifications on environmental protection; and
- Previous site inspection results.

Good site practices were implemented in the project to enhance environmental performance. Key examples implemented in the Project are highlighted as below:

1. Green mesh was placed at the edge of excavation zone to minimise soil erosion and surface runoff.
2. Solar street lights were installed and implemented along the haul road of construction site to reduce energy consumption and provided an eco-friendly lighting service.
3. Sedimentation pit was provided for the storage of treated construction wastewater. All stored wastewater was subsequently being reused for dust suppression and other construction activities.

		
Use of green mesh to minimise soil erosion and surface runoff	Use of solar-lighting along the haul road of construction site	Provision of sedimentation pit for the reuse of treated construction wastewater

Besides, advice was given when necessary to ensure the construction workforce were familiar with relevant procedures, and to maintain good environmental performance on site. Regular toolbox talks on environmental issues were organised for the construction workforce by the contractors to ensure understanding and proper implementation of environmental protection and pollution control mitigation measures.

A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

2.7.1 Landscape and Visual Mitigation Measures

Implementation of applicable landscape and visual mitigation measures (reference to the environmental protection measures CM1 – CM10 in **Appendix B**) is monitored regularly in accordance with the Manual. The implementation status of the environmental protection measures is summarised in **Table 2.24**. For trees which were managed under the Project during the reporting period, relevant measures have been implemented by Contracts 3302, 3303, 3508 and 3801. The total number of retained trees, transplanted trees and to-be-transplanted trees under the management of Project are summarized in **Table 2.25**.

The total number of retained trees of the Project as of September 2022 was 36. Compared to 45 retained trees reported in the previous reporting period, the change in number was due to the following reasons:

- Some trees near Airport North Interchange under Contract 3801 were removed due to potential safety issues along Airport Express Line (AEL) railway track (-9 nos).

Table 2.26 lists the affected tree ID together with the reasons for change of retained tree status of the Project.

The cumulative total number of transplanted trees of the Project remained unchanged (i.e. 26 nos.) comparing with previous reporting quarter. Twelve trees under Contract 3508 transitioned from establishment period to long term management period during the reporting period and managed by Contract 3508 currently. Details of the summary of transplanted trees is shown in **Table 2.27**. Photos of the transplanted trees are presented in **Table 2.28**.

Table 2.24: Landscape and Visual – Construction Phase Audit Summary

Landscape and Visual Mitigation Measures during Construction Implementation Status	Implementation Status	Relevant Contract(s) in the Reporting Period
CM1- The construction area and contractor's temporary works areas shall be minimised to avoid impacts on adjacent landscape.	The implementation of mitigation measures were checked by ET during weekly site inspection and clarified by the Contractors	All works contracts

Landscape and Visual Mitigation Measures during Construction Implementation Status	Implementation Status	Relevant Contract(s) in the Reporting Period
CM2 – Reduction of construction period to practical minimum.	during the monthly Environmental Management Meetings. Implementation of the measures CM5, CM6 and CM7 by Contractors was observed.	
CM3 – Phasing of the construction stage to reduce visual impacts during the construction phase.		
CM4 – Construction traffic (land and sea) including construction plants, construction vessels and barges shall be kept to a practical minimum.		
CM5 – Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.		
CM6 – Avoidance of excessive height and bulk of site buildings and structures		
CM7 – Control of night-time lighting by hooding all lights and through minimisation of night working periods	Tree Protection Specifications have been provided in the relevant Contract Specifications respectively for implementation by the Contractors under the Project. The Contractors' performance on the implementation of the trees maintenance and protection measures were observed and checked by the ET weekly during construction period.	3302, 3508, 3801
CM8 – All existing trees shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas		
CM9 – Trees unavoidably affected by the works shall be transplanted where practical. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme		
	The Contractors were required to submit Method Statements for tree transplanting prior to the transplanting works. Tree inspections were conducted by ET to check the tree transplanting works implemented by the Contractors on site. The Contractors' performance on the implementation of trees maintenance and protection measures on transplanted trees were observed and checked by the ET bi-monthly during the 12-month establishment period after the completion of each batch of transplanting works. Long term management of the transplanted trees were currently monitored by ET annually.	3508, 3801
CM 10 – Land formation works shall be followed with advanced hydroseeding around taxiways and runways as soon as practical	The Contractor's performance on the implementation of advanced hydroseeding works was observed and checked by the ET during weekly site inspection.	

Table 2.25: Summary of the Number of Retained, Transplanted and To-be-transplanted Trees in the Reporting Period

Existing				
Contract	Retain (nos.)	Transplanted (nos.)		To-be-transplanted (nos.)
		Establishment Period	Maintenance Period	
3302	9	0	0	0
3503	0	0	9	0
3508 ⁽¹⁾	24	0	12	0
3602	0	0	0	0
3801	3	0	5 ⁽²⁾	0
Sub-total	36	0	26	0
Provisional				
Contract	Retain (nos.)	Transplanted (nos.)		To-be-transplanted (nos.)
3508 ⁽¹⁾	50	0		10
Sub-total	50	0		10
Grand Total	86	26		10

Notes:

- (1) As some of the site areas have been handed over to Contract 3508, existing trees to be managed by Contract 3508 is subject to change after initial tree surveys for each batch of handed over site areas have been conducted by the Contractor.
- (2) Three transplanted trees (CT1194, CT1794 and CT1795) were subsequently fell after transplantation. Please refer to **Table 2.27** for details.

Table 2.26: Summary of the Tree Status Updated in the Reporting Period

Tree ID(s)	Contract	Previous Status (June 2022)	Current Status (September 2022)	Remarks	Impact to Retain Tree Number
CT1406, CT1407, CT1411, CT1413, CT1414, CT1415, CT1416, CT1418, T6	3801	Retain	Fell	9 nos. of trees were removed due to potential safety issues along Airport Express Line (AEL) railway track.	- 9 nos.

Table 2.27: Summary of the Transplanted Trees Updated in the Reporting Period

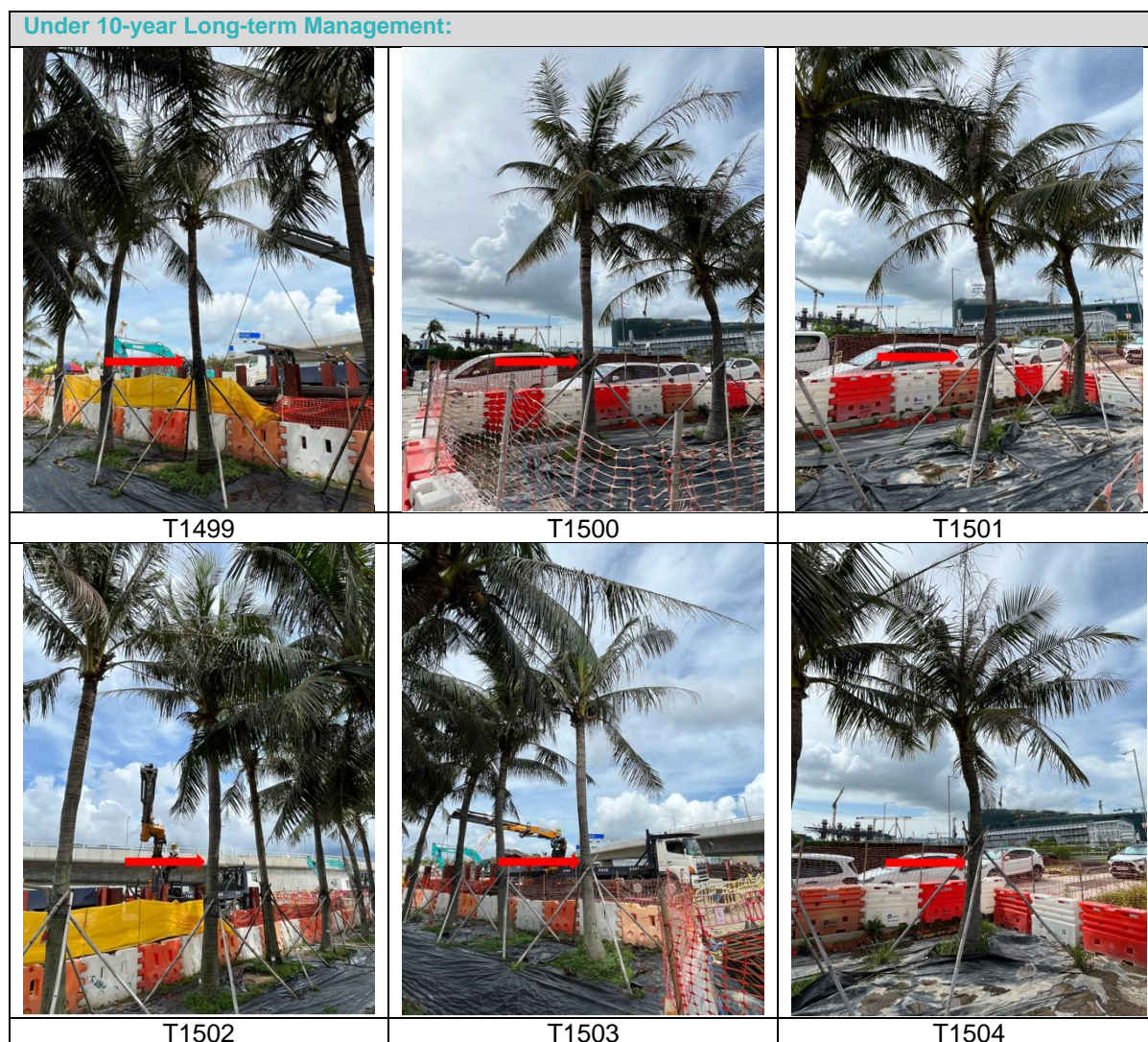
Tree ID	Transplant Date	Management Stage	Management Agency	Remarks
CT276	3 May 2018	<u>Long Term Management period</u> Jun 2019 – May 2028	Southern Landside Petrol Filling Station	Next inspection will be conducted in February 2023. Photos of the last inspection in February 2022 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.74.
CT1253	4 May 2018	<u>Long Term Management period</u> Jun 2019 – May 2028	Southern Landside Petrol Filling Station	
T835	22 Jan 2020	<u>Long Term Management period</u> Feb 2021 – Jan 2030	AAHK	Next inspection will be conducted in February 2023. Photos of the last inspection in February 2022 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.74.
T836	13 Dec 2019	<u>Long Term Management period</u> Feb 2021 – Jan 2030	AAHK	
T838	22 Jan 2020	<u>Long Term Management period</u> Feb 2021 – Jan 2030	AAHK	

Tree ID	Transplant Date	Management Stage	Management Agency	Remarks
T812	21 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	Next inspection will be conducted in December 2022. Photos of the last inspection in December 2021 can be referred to Table 7.7 of the Construction Phase Monthly EM&A Report No.72.
T814	20 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	
T815	15 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	
T829	18 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	
T830	14 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	
T831	19 Dec 2020	<u>Long Term Management period</u> Jan 2022 – Dec 2031	AAHK	
T1493	6 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	Next inspection will be conducted in July 2023. Photos of the last inspection in July 2022 were shown in Table 2.26 .
T1494	6 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1495	10 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1496	5 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1497	5 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1498	29 Jun 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1499	29 Jun 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1500	30 Jun 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1501	30 Jun 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1502	5 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1503	6 Jul 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
T1504	24 Jun 2021	<u>Long Term Management period</u> Aug 2022 – Jul 2031	Contract 3508	
CT1194	4 May 2018	<u>Long Term Management period</u> Jun 2019 – May 2028	Southern Landside Petrol Filling Station	Uprooted and collapsed due to Typhoon Higos on 18 August 2020. Tree removal was conducted as recommended by tree specialist of the contractor of Southern Landside Petrol Filling Station.
CT1794	3 May 2018	<u>Long Term Management period</u> Jun 2019 – May 2028	AsiaWorld-Expo	The tree within the land parcel was acquired by the government for construction of emergency hospital to handle COVID19 pandemic at AsiaWorld-Expo. The tree was felled in late 2020.
CT1795	3 May 2018	<u>Long Term Management period</u> Jun 2019 – May 2028	AsiaWorld-Expo	The tree within the land parcel was acquired by the

Tree ID	Transplant Date	Management Stage	Management Agency	Remarks
				government for construction of emergency hospital to handle COVID19 pandemic at AsiaWorld-Expo. The tree was felled in late 2020.

Table 2.28: Photos of the Existing Transplanted Trees Inspected in the Reporting Period

Under 10-year Long-term Management:					
					
T1493	T1494	T1495			
					
T1496	T1497	T1498			



2.7.2 Land Contamination Assessment

The Supplementary CAP was submitted to EPD pursuant to EP Condition 2.20. The CARs for Golf Course and T2 Emergency Power Supply Systems (EPSS) were submitted to EPD in accordance with EP Condition 1.9 and the Supplementary CAP in which no land contamination issues were identified. EPD has issued no further comment for aforesaid CARs. No leakage was found after the removal of underground fuel pipelines and all required additional photos have been submitted to EPD.

According to the approved supplementary CAP, there are 3 remaining locations where site re-appraisal / additional site investigation are proposed. Based on the latest construction information, which has been presented in Appendix A Implementation Schedule of the approved CARs for T2 EPSS, there is no development programme for these locations at this stage. As such, the status of site re-appraisal/ additional site investigation will be further updated upon latest development programme is available.

2.8 Audit of SkyPier High Speed Ferries

The Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier (the SkyPier Plan) was submitted to the Advisory Council on the Environment for comment and subsequently submitted to and approved by EPD in November 2015 under EP Condition 2.10. The approved

SkyPier Plan is available on the dedicated website of the Project. In the SkyPier Plan, AAHK has committed to implement the mitigation measure of requiring HSFs of SkyPier travelling between HKIA and Zhuhai / Macau to start diverting the route with associated speed control across the area, i.e. Speed Control Zone (SCZ), with high CWD abundance. The route diversion and speed restriction at the SCZ have been implemented since 28 December 2015.

Due to the COVID-19 pandemic, all SkyPier HSF services to/from Zhuhai and Macau have been suspended from 25 March 2020 until further notice. Limited HSF services from other destination, which does not require the use of the diverted route, were provided starting from 28 October 2020.

No ferry movement between HKIA SkyPier to/from Zhuhai and Macau was recorded in the reporting period. The daily movements of all SkyPier HSFs in the reporting period, including those not using the diverted route, ranged between 3 and 8, which fell within the maximum daily cap number of 125.

The construction works of the Hong Kong Offshore LNG Terminal Project were carried out from Q1 to Q3 2022. However, there was no implication to the route diversion operation of the SkyPier HSFs since all SkyPier HSF services to /from Zhuhai and Macau were suspended. ET will continue to closely monitor the implementation of the SkyPier Plan.

2.9 Audit of Construction and Associated Vessels

On the implementation of the updated Marine Travel Routes and Management Plan for Construction and Associated Vessels (MTRMP-CAV), the Maritime Surveillance System (MSS) automatically recorded deviation cases such as speeding, entering no entry zone, and not traveling through the designated gates. ET conducted bi-weekly audit of relevant information including AIS data, vessel tracks and other relevant records to ensure sufficient information were provided by the system and the contractors complied with the requirements of the MTRMP-CAV. The contractors submitted 3-month rolling vessel plans for construction vessel activities to AAHK in order to help maintain the number of construction vessels to a practicable minimum. The IEC also performed audit on the compliance of the requirements as part of the EM&A programme.

During the reporting period, deviations including speeding within the works area, entry from non-designated gates, and entering no-entry zones were identified. After investigation by the contractor's Construction Traffic Control Centre (CTCC) representatives, all the concerned captains were reminded to comply with the requirements of the MTRMP-CAV.

A total of 6 skipper training workshops were held with 12 captains by contractors' Environmental Officers and competency tests were conducted subsequently with the trained captains by ET.

2.10 Review of the Key Assumptions Adopted in the EIA Report

With reference to Appendix E of the Manual, it is noted that the key assumptions adopted in approved EIA report for the construction phase are still valid and no major changes are involved. The environmental mitigation measures recommended in the approved EIA Report remain applicable and shall be implemented in undertaking construction works for the Project.

3 Report on Non-compliance, Complaints, Notifications of Summons and Prosecutions

3.1 Compliance with Other Statutory Environmental Requirements

During the reporting period, environmental related licenses and permits required for the construction activities were checked. No non-compliance with environmental statutory requirements was recorded.

3.2 Analysis and Interpretation of Complaints, Notification of Summons and Status of Prosecutions

3.2.1 Complaints

No environmental complaint was received during the reporting period. The environmental complaints as received in June 2022 were attended to and investigations were conducted by the ET in accordance with the Manual and the Complaint Management Plan. A summary of the complaints and analyses is presented in **Table 3.1**.

Table 3.1: Summary of Environmental Complaints

Date of Complaint Received	Details	Analysis/ Remedial Actions	Status
28 June 2022	A complaint regarding dust issue at 3RS construction site was received.	<p>A complaint regarding dust issue at 3RS construction site area was received on 28 June 2022. The case was investigated by ET in accordance with the Manual and the Complaint Management Plan of the Project. From the photos provided by the complainant, ET recognized the locations, identified the related contractors and requested them to provide information regarding the complaint.</p> <p>According to the information received, the contractors reported they had assigned water tankers to carry out water spraying to the concerned locations. The contractors also reviewed their dust control layout plan and provided enhanced mitigation measure such as refresher training to their water tanker drivers. At ET's weekly site inspections, dust was observed when there were vehicle movements on haul roads and was rectified by the related contractor. At a subsequent joint site inspection, no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads were wet during inspection. All contractors were reminded to properly implement dust mitigation measures, especially water spraying at haul roads in accordance with the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.</p>	Closed
28 June 2022	A complaint regarding dust issue at 3RS construction site was received.	<p>A complaint regarding dust issue at 3RS construction site area was received on 28 June 2022. The case was investigated by ET in accordance with the Manual and the Complaint Management Plan of the Project. From the photos provided by the complainant, ET recognized the location, identified a related contractor and requested them to provide information regarding the complaint.</p> <p>The contractor replied they had arranged water trucks to carry out water spraying at the concerned location. The contractors also reviewed their dust control layout plan and provided enhanced mitigation measures such as refresher training to their water tanker drivers and added water tanker to the fleet. At</p>	Closed

Date of Complaint Received	Details	Analysis/ Remedial Actions	Status
		ET's weekly site inspections, dust was observed during vehicle movements on main haul roads and was rectified by the related contractor. At a subsequent joint site inspection, no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads were wet during inspection. All contractors were reminded to properly implement dust mitigation measures, especially water spraying at haul roads in accordance with the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.	
30 June 2022	A complaint regarding dust issue at 3RS construction site was received.	<p>A complaint regarding dust issue at 3RS construction site was received on 30 June 2022. The case was investigated by ET in accordance with the Manual and the Complaint Management Plan of the Project. The ET recognized the location, identified related contractors and requested them to provide information regarding the complaint.</p> <p>According to the information received, the contractors reported they had reviewed their dust control layout plan and provided their watering records and photo records to the ET. Review of the received records indicated the contractors had provided water spraying at the concerned location during the alleged period. Besides, the contractors had also conducted refresher training with their water truck drivers regarding the arrangement for water spraying at the site areas. At ET's weekly site inspections, fugitive dust was observed at haul roads and stockpile areas, and were rectified by the related contractors. During a joint inspection, no fugitive dust was observed when there were vehicle movements at the concerned haul roads and the roads were wet during inspection. Having said that, at another joint site inspection, fugitive dust was observed at stockpile area and was being rectified by the related contractor. ET and IEC would continue to monitor contractors' performance on dust suppression and mitigation in accordance with the respective dust control layout plan. All contractors were reminded to properly implement dust mitigation measures in accordance with the implementation schedule in the Updated EM&A Manual. Hence, the case was considered closed.</p>	Closed

3.2.2 Notifications of Summons or Status of Prosecution

Neither notification of summons nor prosecution was received during the reporting period.

3.3 Cumulative Statistics

Cumulative statistics on valid exceedance, non-compliance, complaints, notifications of summons and status of prosecutions are summarised in **Table 3.2** and **Table 3.3**.

Table 3.2: Statistics for Valid Exceedances for the Environmental Monitoring

		Total No. Recorded in the Reporting Period	Total No. Recorded since the Project Commenced
1-hr TSP	Action Level	0	0
	Limit Level	0	0
Noise	Action Level	0	0
	Limit Level	0	0
Waste	Action Level	0	1
	Limit Level	0	0
Water	Action Level	0	0
	Limit Level	0	0
CWD	Action Level	0	0
	Limit Level	0	0

Remark: Non-project related triggers of Action or Limit Level are not shown in this table.

Table 3.3: Statistics for Non-compliance, Complaints, Notifications of Summons and Prosecution

Reporting Period	Cumulative Statistics			
	Non-compliance	Complaints	Notifications of Summons	Prosecutions
This reporting period	0	0	0	0
From 28 December 2015 to end of the reporting period	0	55	2	2

4 Conclusion and Recommendation

In the third quarter of 2022, the EM&A programme has been implemented as planned, including 96 sets of air quality measurements, 50 sets of construction noise measurements, 37 sets of water quality measurements, 6 complete sets of vessel line transect surveys and 6 days of land-based theodolite tracking survey effort for CWD monitoring, as well as environmental site inspections and waste monitoring for the Project's construction works.

The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included filling, seawall construction and land-based ground improvement works, together with runway, taxiways, concourse and associated works. Land-based works on existing airport island mainly involved airfield works, Terminal 2 expansion works, modification and tunnel work for APM and BHS, and preparation work for utilities, with activities include road and drainage works, cable ducting, demolition, piling, and excavation works.

Monitoring results of construction dust, construction noise, construction waste and CWD monitoring did not trigger the corresponding Action and Limit Levels during the reporting period.

For water quality, the water quality monitoring results for all parameters, except DO, obtained during the reporting period were within the corresponding Action and Limit Levels stipulated in the EM&A programme. Relevant investigation and follow-up actions will be conducted according to the EM&A programme if the corresponding Action and Limit Levels are triggered. For DO, some testing results triggered the relevant Action and Limit Levels, and the corresponding investigations were conducted accordingly. The investigation findings concluded that the cases were not related to the Project. In summary, the construction activities undertaken during the reporting period did not introduce adverse impact to all water quality sensitive receivers.

Site inspections of the construction works to audit the implementation of proper environmental pollution control and mitigation measures for the Project were conducted by ET and IEC on a weekly and bi-weekly basis, respectively. Site inspection findings were recorded in the site inspection checklists and provided to the contractors to follow up.

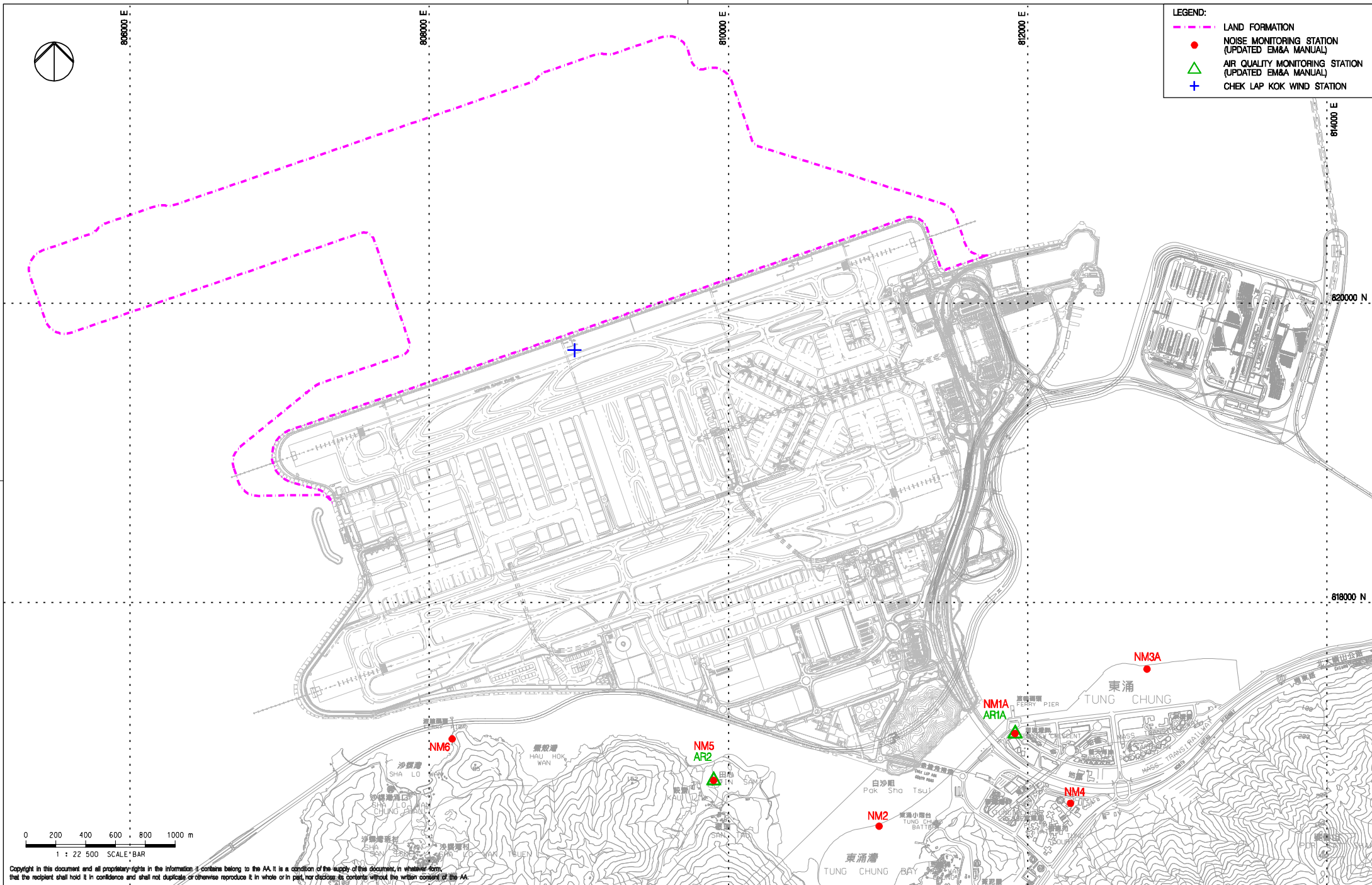
No HSF movement between HKIA SkyPier to/from Zhuhai and Macau was recorded during the reporting period. Therefore, no deviation was recorded in the HSF monitoring during the reporting period.

During the reporting period, ET conducted bi-weekly audit of the MSS to ensure the system recorded all deviation cases accurately and the contractors fully complied with the requirements of the MTRMP-CAV. A total of 6 skipper training workshops were held by contractors' Environmental Officers during the reporting period and competency tests were conducted subsequently with the trained skippers by ET.


On the implementation of MMWP and DEZ Plan, dolphin observers were deployed by the contractors in accordance with the plans. No dolphin or other marine mammals were observed within or around the DEZ in this reporting period. Audits of contractors' implementation and records, and also acoustic decoupling for construction vessels were carried out by the ET during site inspection.

The recommended environmental mitigation measures, as included in the EM&A programme, were effectively implemented during the reporting period. Also, the EM&A programme implemented by the ET has effectively monitored the construction activities and ensured the proper implementation of mitigation measures.

Figures



Rev.	Date	Description	Checked
A	06JAN16	FIRST ISSUE	RO
B	29JAN16	GENERAL REVISION	RO
C	11FEB16	GENERAL REVISION	RO
D	29OCT18	GENERAL REVISION	SH



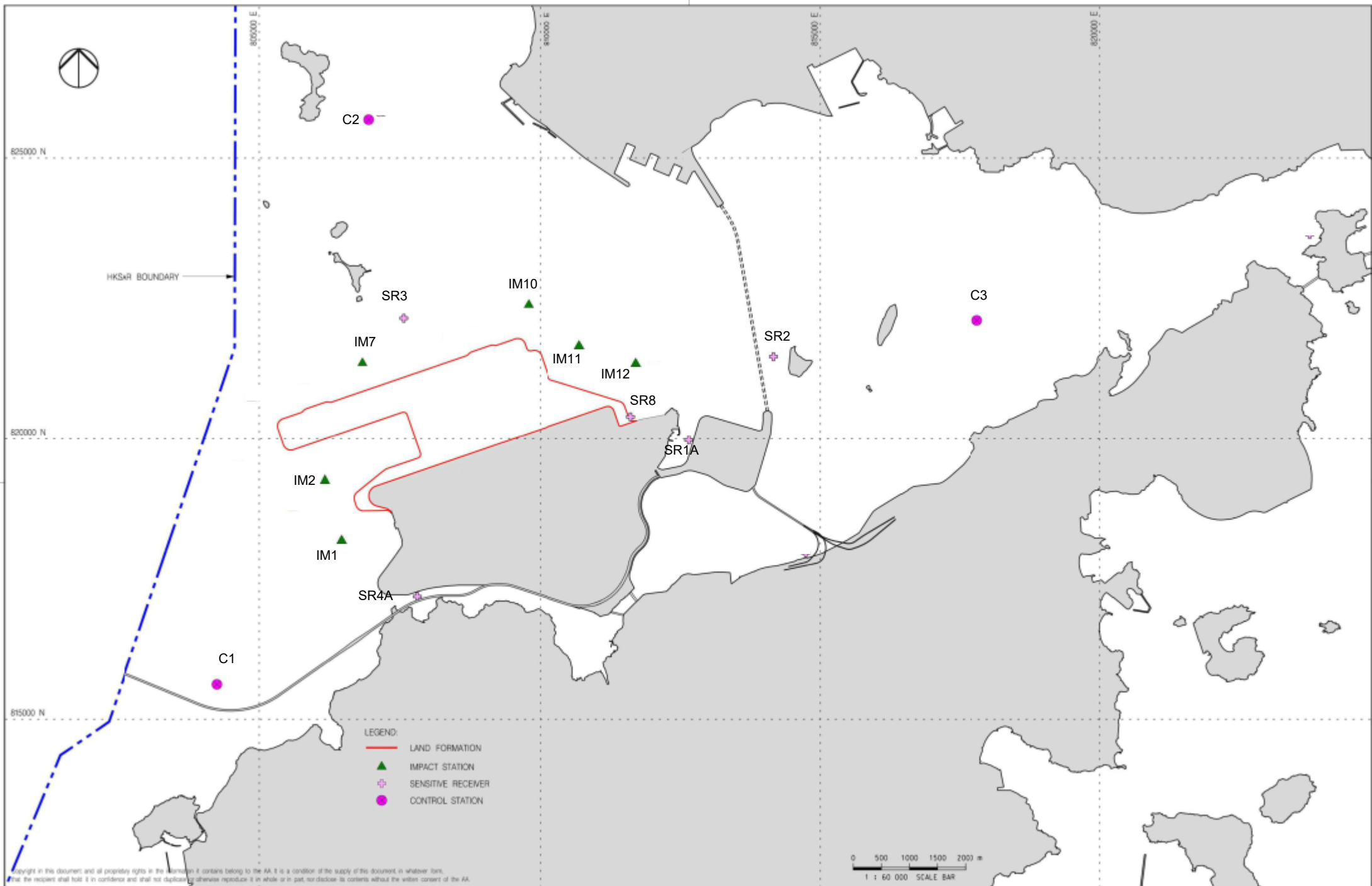
HONG KONG
INTERNATIONAL
AIRPORT
Airport Authority 香港國際機場管理局
1994-2018



LOCATIONS OF AIR AND NOISE MONITORING STATIONS AND CHEK LAP KOK WIND STATION

Consultant's Signatures for Approval		Date
Design	TK	29OCT18
Checkers	TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM		Scale at A3
Drawing No.	FIGURE 2.1	1:22500
Rev.	D	



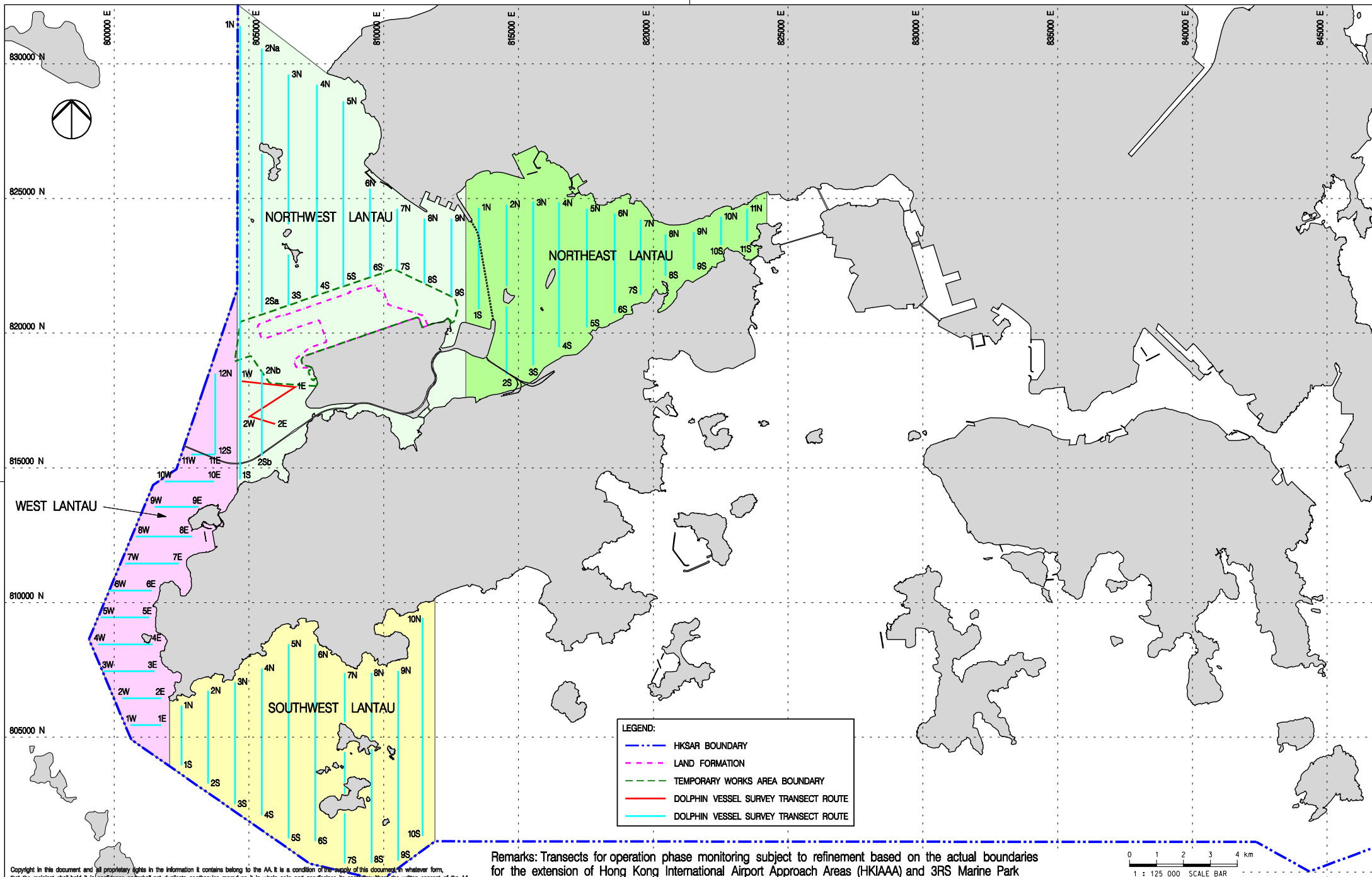
Rev.	Date	Description	Checked
A	21AUG19	FIRST ISSUE	VL



Title
WATER QUALITY MONITORING STATIONS

Consultant's Signatures for Approval		Date
Design	DC	21AUG19
Checkers	DC / TK	21AUG19
Approver	EC	21AUG19

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	Scale at A3 1 : 60000
FIGURE 2.2	
Rev.	A



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Remarks: Transects for operation phase monitoring subject to refinement based on the actual boundaries for the extension of Hong Kong International Airport Approach Areas (HKIAAA) and 3RS Marine Park

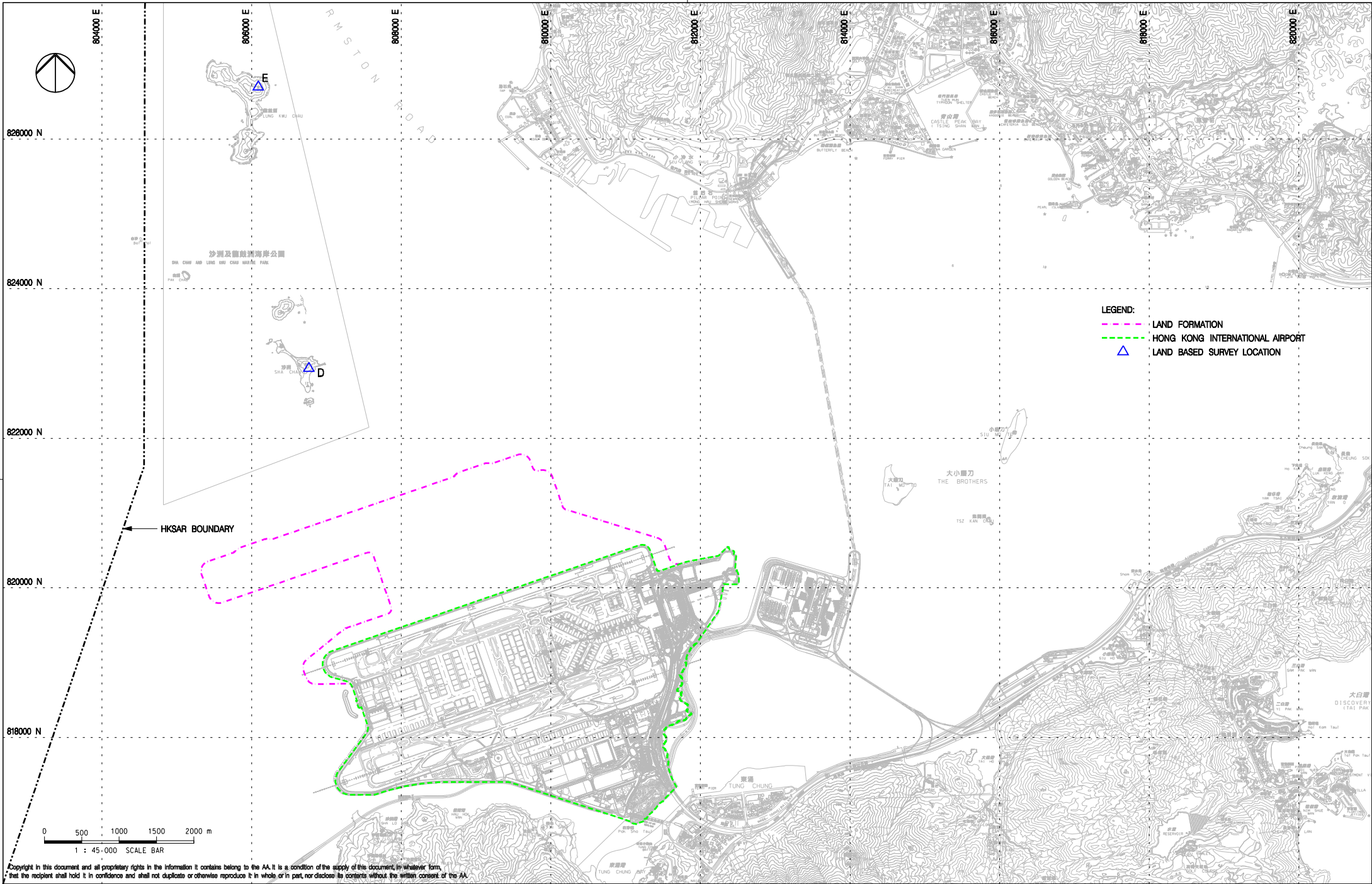
Rev.	Date	Description	Checked
B	27JUL16	GENERAL REVISION	JT
C	06FEB17	GENERAL REVISION	JT
D	01MAR17	GENERAL REVISION	JT
E	29OCT18	GENERAL REVISION	SH
F	04APR19	GENERAL REVISION	SH



Title
VESSEL BASED DOLPHIN MONITORING
TRANSECTS IN CONSTRUCTION,
POST-CONSTRUCTION AND OPERATION PHASES

Consultant's Signatures for Approval		Date
Design	JC	04APR19
Checkers	JC / TK	04APR19
Approver	EC	04APR19

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM		Scale at A3 1 : 125000
Drawing No.	FIGURE 2.3	Rev. F



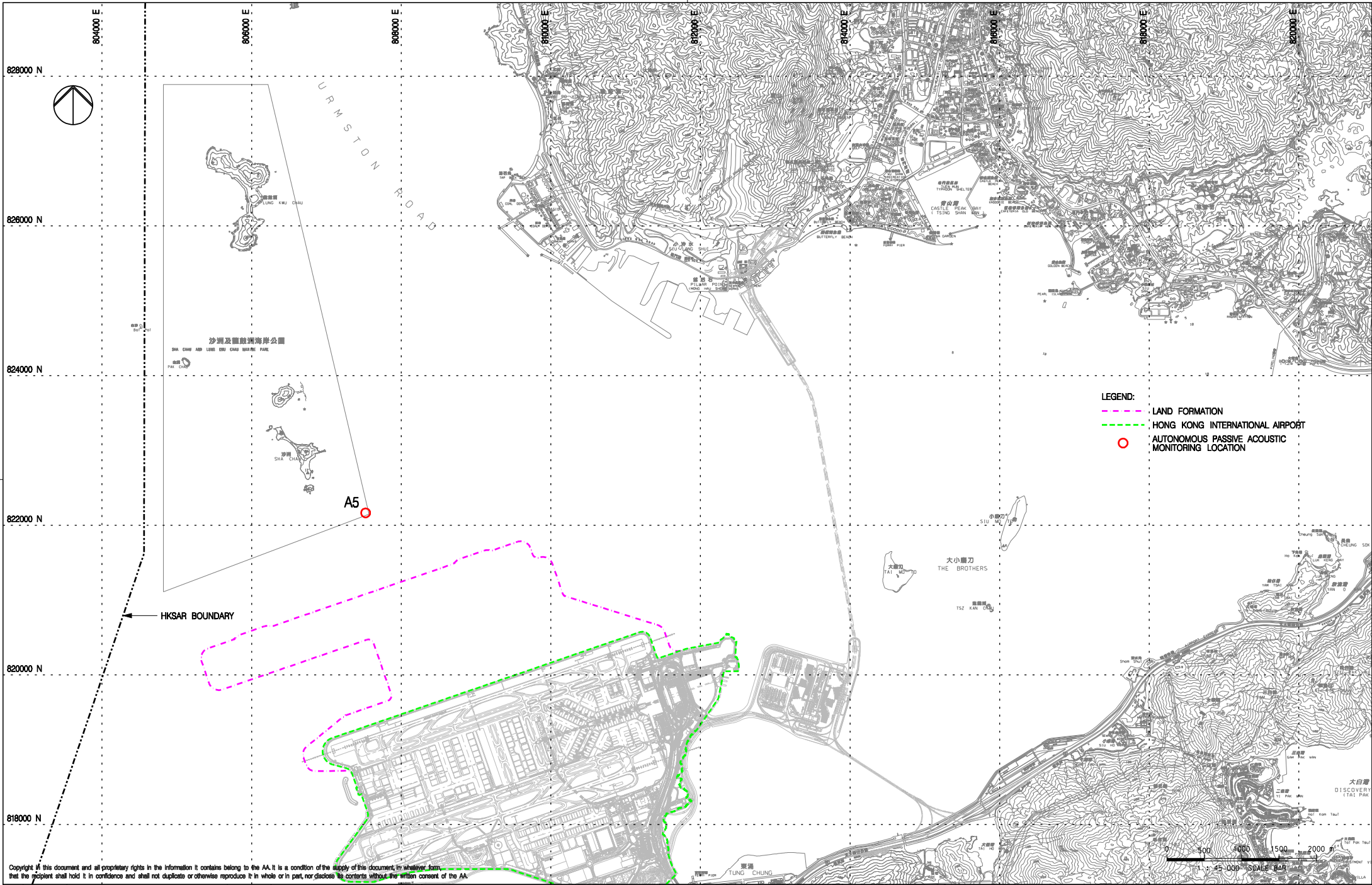
Rev.	Date	Description	Checked
A	02DEC15	FIRST ISSUE	JC
B	06FEB17	GENERAL REVISION	JC
C	29OCT18	GENERAL REVISION	SH



**LAND BASED DOLPHIN MONITORING
IN BASELINE AND CONSTRUCTION PHASES**

Consultant's Signatures for Approval		Date
Design	JC	29OCT18
Checkers	JC / TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	Scale at A3 1 : 45000
FIGURE 2.4	
Rev.	C



Rev.	Date	Description	Checked
A	29AUG17	FIRST ISSUE	JT
B	10OCT17	GENERAL REVISION	PL
C	29OCT18	GENERAL REVISION	SH



LOCATION FOR AUTONOMOUS PASSIVE ACOUSTIC MONITORING

Consultant's Signatures for Approval		Date
Design	JC	29OCT18
Checkers	JC / TK	29OCT18
Approver	EC	29OCT18

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM	
Drawing No.	Scale at A3
FIGURE 2.10	1: 45000
Rev.	C

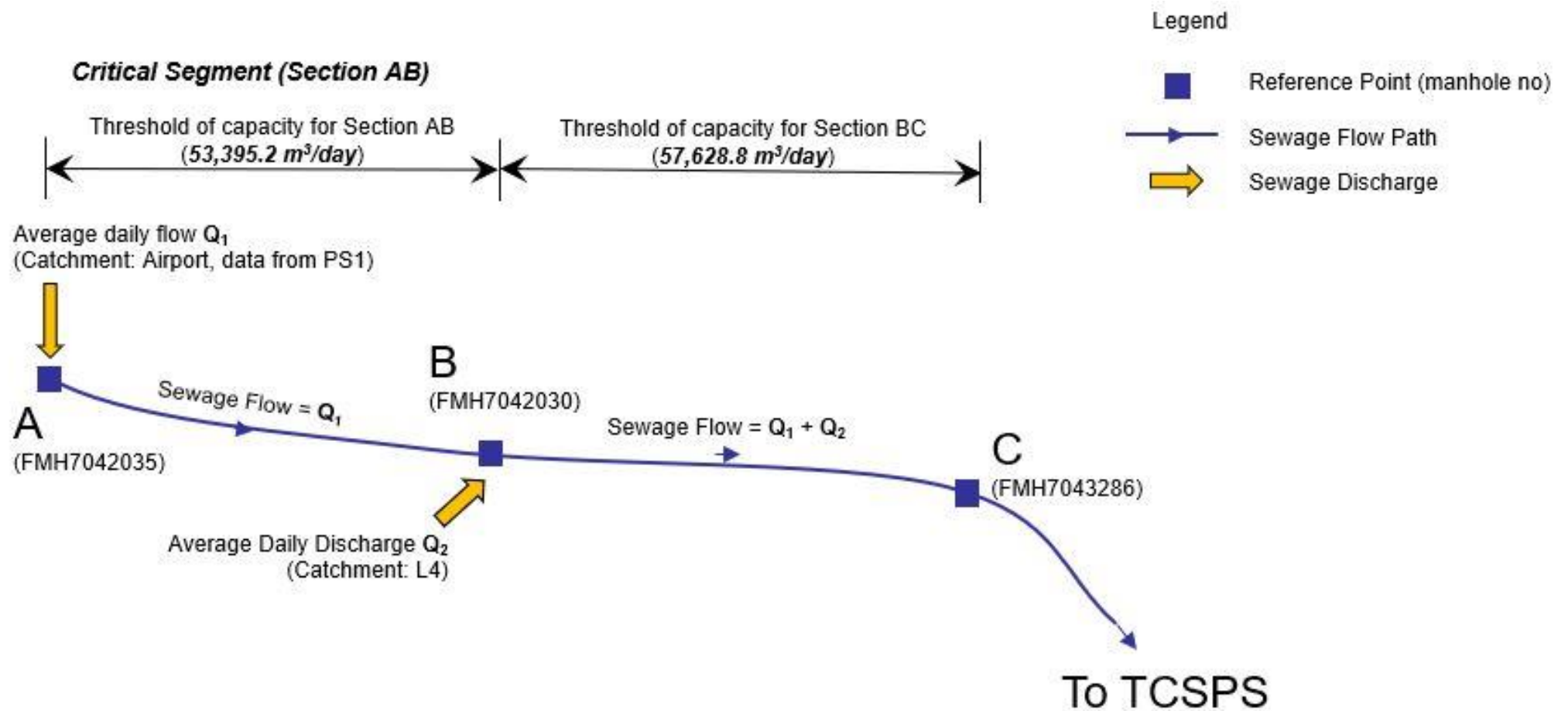
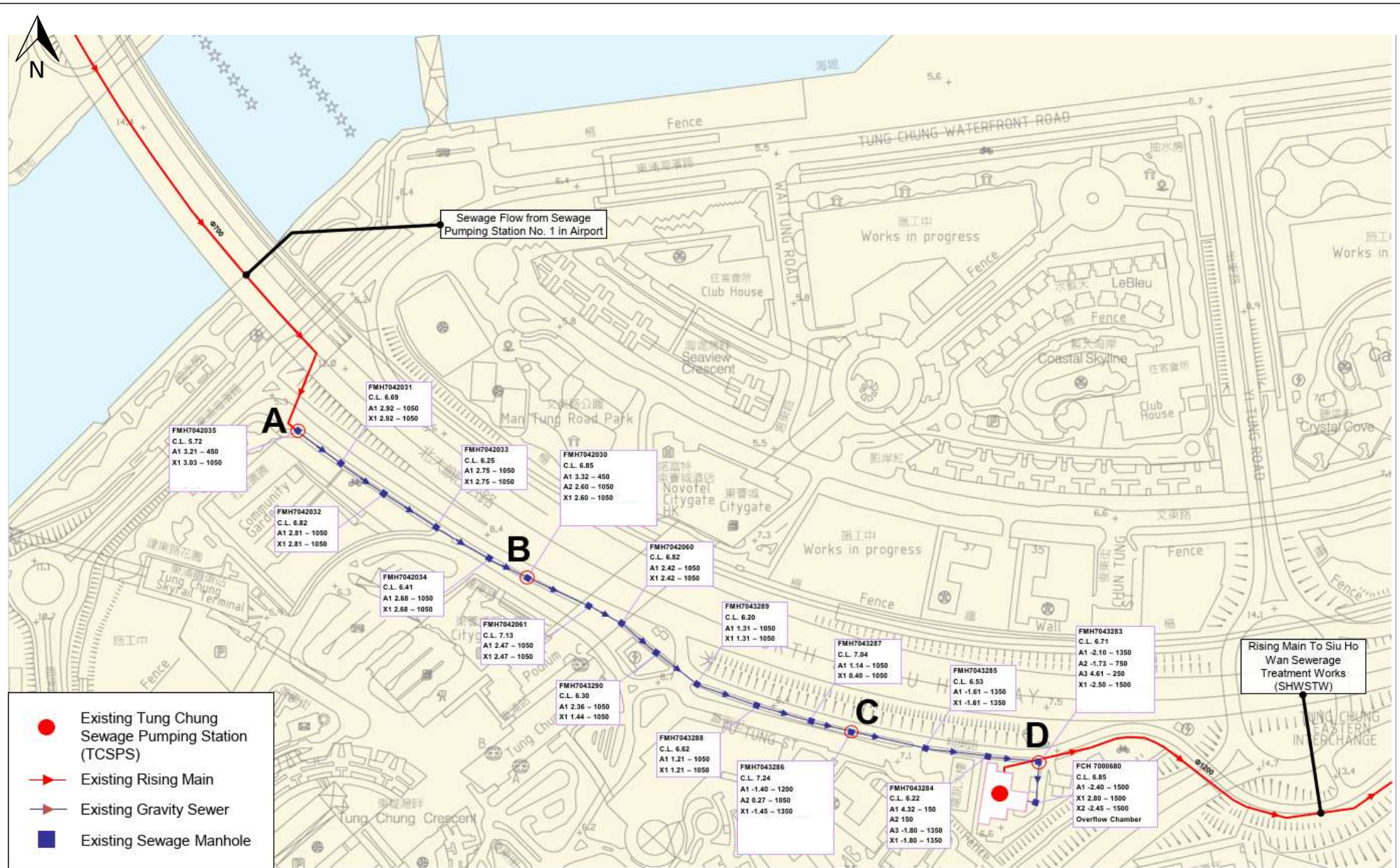


FIGURE 2.11 SCHEMATIC DIAGRAM FOR SEWERAGE SYSTEM FLOW MONITORING



Project Hong Kong International Airport Contract 3101 - 3RS Environmental Team Consultancy Services -
Proposal for Additional Services on Development of Method for Annual Sewage Flow Monitoring for the Existing Gravity Sewer

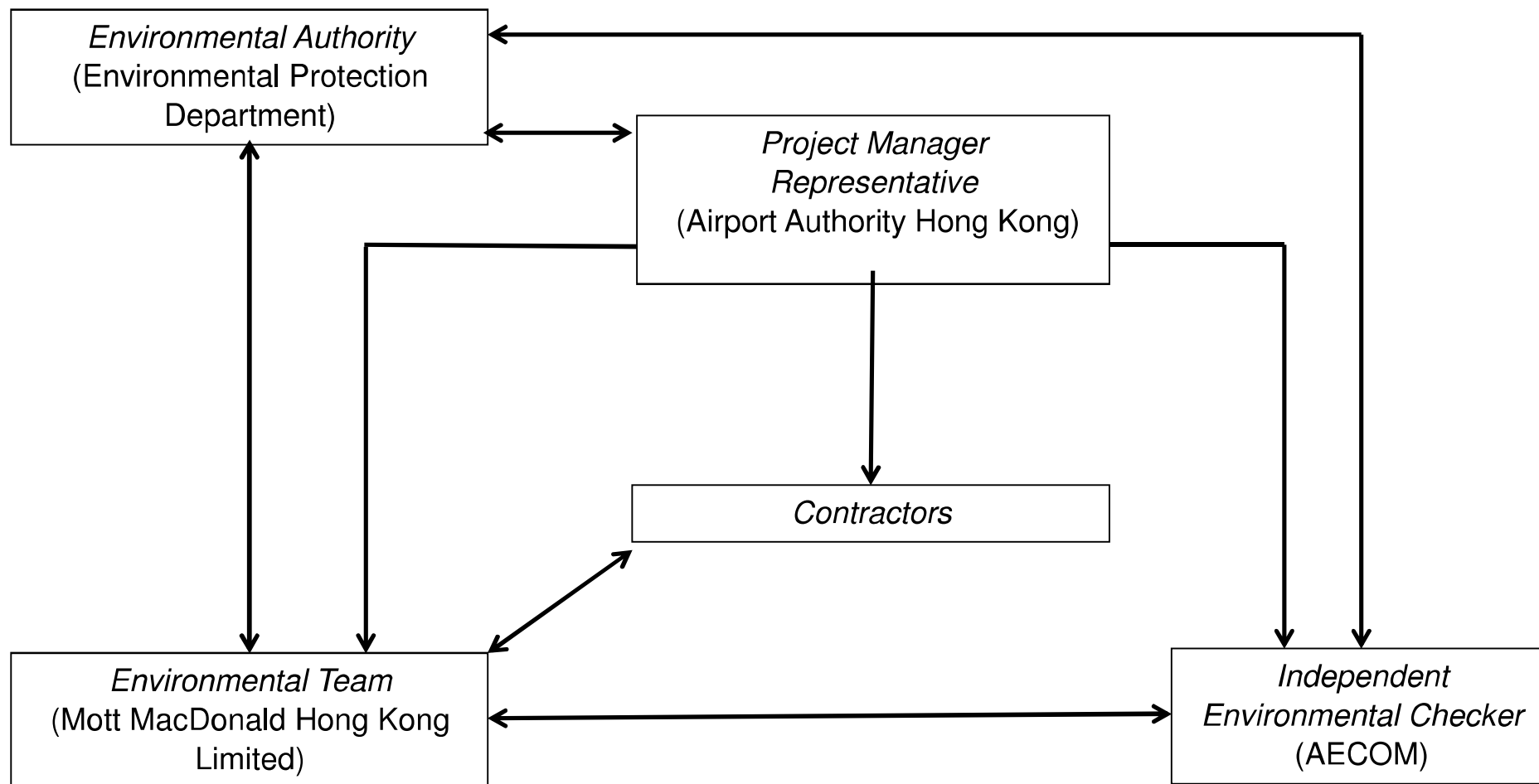
Title Sewerage System Collecting Sewage from Airport

Date Nov 2020 **Scale** N.T.S. **File**

M
M
MOTT
MACDONALD

FIGURE 2.12

Appendix A. Project Organization Chart



Appendix B. Environmental Mitigation Implementation Schedule (EMIS) for Construction Phase

Environmental Mitigation Implementation Schedule (EMIS) for Construction Phase

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
Air Quality Impact – Construction Phase					
5.2.6.2	2.1	-	Dust Control Measures <ul style="list-style-type: none"> Water spraying for 12 times a day or once every two hours for 24-hour working at all active works area. 	Within construction site / Duration of the construction phase	I
5.2.6.3	2.1	-	<ul style="list-style-type: none"> Covering of at least 80% of the stockpiling area by impervious sheets. Water spraying of all dusty materials immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling. 	Within construction site / Duration of the construction phase	I
5.2.6.4	2.1	-	<p>Dust control practices as stipulated in the Air Pollution Control (Construction Dust) Regulation should be adopted. These practices include:</p> <p>Good Site Management</p> <ul style="list-style-type: none"> Good site management is important to help reducing potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning. 	Within construction site / Duration of the construction phase	I
			<p>Disturbed Parts of the Roads</p> <ul style="list-style-type: none"> Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet. 	Within construction site / Duration of the construction phase	I
			<p>Exposed Earth</p> <ul style="list-style-type: none"> Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies. 	Within construction site / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<p>Loading, Unloading or Transfer of Dusty Materials</p> <ul style="list-style-type: none"> All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet. 	Within construction site / Duration of the construction phase	I
			<p>Debris Handling</p> <ul style="list-style-type: none"> Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides; and Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped. 	Within construction site / Duration of the construction phase	I
			<p>Transport of Dusty Materials</p> <ul style="list-style-type: none"> Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards. 	Within construction site / Duration of the construction phase	I
			<p>Wheel washing</p> <ul style="list-style-type: none"> Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. 	Within construction site / Duration of the construction phase	I
			<p>Use of vehicles</p> <ul style="list-style-type: none"> The speed of the trucks within the site should be controlled to about 10km/hour in order to reduce adverse dust impacts and secure the safe movement around the site; Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels; and Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle. 	Within construction site / Duration of the construction phase	I
			<p>Site hoarding</p> <ul style="list-style-type: none"> Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit. 	Within construction site / Duration of the construction phase	I
5.2.6.5	2.1	-	<p>Best Practices for Concrete Batching Plant</p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2 as well as in the future Specified Process licence should be adopted. The best practices are recommended to be applied to both the land based and floating concrete batching plants. Best practices include:</p> <p>Cement and other dusty materials</p>	Within Concrete Batching Plant / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> The loading, unloading, handling, transfer or storage of cement, pulverised fuel ash (PFA) and/or other equally dusty materials shall be carried in a totally enclosed system acceptable to EPD. All dust-laden air or waste gas generated by the process operations shall be properly extracted and vented to fabric filtering system to meet the required emission limit; Cement, PFA and/or other equally dusty materials shall be stored in storage silo fitted with audible high-level alarms to warn of over-filling. The high-level alarm indicators shall be interlocked with the material filling line such that in the event of the silo approaching an overfilling condition, an audible alarm will operate, and after 1 minute or less the material filling line will be closed; Vents of all silos shall be fitted with fabric filtering system to meet the required emission limit; Vents of cement/PFA weighing scale shall be fitted with fabric filtering system to meet the required emission limit; and Seating of pressure relief valves of all silos shall be checked, and the valves re-seated if necessary, before each delivery. 		
			<p>Other raw materials</p> <ul style="list-style-type: none"> The loading, unloading, handling, transfer or storage of other raw materials which may generate airborne dust emissions such as crushed rock, sand, stone aggregate, shall be carried out in such a manner to prevent or minimize dust emissions; The materials shall be adequately wetted prior to and during the loading, unloading and handling operations. Manual or automatic water spraying system shall be provided at all unloading areas, stockpiles and material discharge points; All receiving hoppers for unloading relevant materials shall be enclosed on three sides up to 3 m above the unloading point. In no case shall these hoppers be used as the material storage devices; The belt conveyor for handling materials shall be enclosed on top and two sides with a metal board at the bottom to eliminate any dust emission due to wind-whipping effect. Other type of enclosure will also be accepted by EPD if it can be demonstrated that the proposed enclosure can achieve same performance; All conveyor transfer points shall be totally enclosed. Openings for the passage of conveyors shall be fitted with adequate flexible seals; Scrapers shall be provided at the turning points of all conveyors to remove dust adhered to the belt surface; Conveyors discharged to stockpiles of relevant materials shall be arranged to minimize free fall as far as practicable. All free falling transfer points from conveyors to stockpiles shall be enclosed with chute(s) and water sprayed; Aggregates with a nominal size less than or equal to 5 mm should be stored in totally enclosed structure such as storage bin and should not be handled in open area. Where there is sufficient buffer area surrounding the concrete batching plant, ground stockpiling may be used; 	<p>Within Concrete Batching Plant / Duration of the construction phase</p>	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> The stockpile shall be enclosed at least on top and three sides and with flexible curtain to cover the entrance side; Aggregates with a nominal size greater than 5 mm should preferably be stored in a totally enclosed structure. If open stockpiling is used, the stockpile shall be enclosed on three sides with the enclosure wall sufficiently higher than the top of the stockpile to prevent wind whipping; and The opening between the storage bin and weighing scale of the materials shall be fully enclosed. 		
			<p>Loading of materials for batching</p> <ul style="list-style-type: none"> Concrete truck shall be loaded in such a way as to minimise airborne dust emissions. The following control measures shall be implemented: <ol style="list-style-type: none"> Pre-mixing the materials in a totally enclosed concrete mixer before loading the materials into the concrete truck is recommended. All dust-laden air generated by the pre-mixing process as well as the loading process shall be totally vented to fabric filtering system to meet the required emission limit; and If truck mixing batching or other types of batching method is used, effective dust control measures acceptable to EPD shall be adopted. The dust control measures must have been demonstrated to EPD that they are capable to collect and vent all dust-laden air generated by the material loading/mixing to dust arrestment plant to meet the required emission limit. The loading bay shall be totally enclosed during the loading process. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Vehicles</p> <ul style="list-style-type: none"> All practicable measures shall be taken to prevent or minimize the dust emission caused by vehicle movement; and All access and route roads within the premises shall be paved and adequately wetted. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Housekeeping</p> <ul style="list-style-type: none"> A high standard of housekeeping shall be maintained. All spillages or deposits of materials on ground, support structures or roofs shall be cleaned up promptly by a cleaning method acceptable to EPD. Any dumping of materials at open area shall be prohibited. 	Within Concrete Batching Plant / Duration of the construction phase	I
5.2.6.6	2.1	-	<p>Best Practices for Asphaltic Concrete Plant</p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Tar and Bitumen Works (Asphaltic Concrete Plant) BPM 15 (94) as well as in the future Specified Process licence should be adopted. These include:</p> <p>Design of Chimney</p> <ul style="list-style-type: none"> The chimney shall not be less than 3 metres plus the building height or 8 metres above ground level, whichever is the greater; The efflux velocity of gases from the main chimney shall not be less than 12 m/s at full load condition; 	Within Concrete Batching Plant / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> The flue gas exit temperature shall not be less than the acid dew point; and Release of the chimney shall be directed vertically upwards and not be restricted or deflected. 		
			<p>Cold feed side</p> <ul style="list-style-type: none"> The aggregates with a nominal size less than or equal to 5 mm shall be stored in totally enclosed structure such as storage bin and shall not be handled in open area; Where there is sufficient buffer area surrounding the plant, ground stockpiling may be used. The stockpile shall be enclosed at least on top and three sides and with flexible curtain to cover the entrance side. If these aggregates are stored above the feeding hopper, they shall be enclosed at least on top and three sides and be wetted on the surface to prevent wind-whipping; The aggregates with a nominal size greater than 5 mm should preferably be stored in totally enclosed structure. Aggregates stockpile that is above the feeding hopper shall be enclosed at least on top and three sides. If open stockpiling is used, the stockpiles shall be enclosed on three sides with the enclosure wall sufficiently higher than the top of the stockpile to prevent wind whipping; Belt conveyors shall be enclosed on top and two sides and provided with a metal board at the bottom to eliminate any dust emission due to the wind-whipping effect. Other type of enclosure will also be accepted by EPD if it can be demonstrated that the proposed enclosure can be achieve the same performance; Scrapers shall be provided at the turning points of all belt conveyors inside the chute of the transfer points to remove dust adhered to the belt surface; All conveyor transfer points shall be totally enclosed. Openings for the passages of conveyors shall be fitted with adequate flexible seals; and All materials returned from dust collection system shall be transferred in enclosed system and shall be stored inside bins or enclosures. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Hot feed side</p> <ul style="list-style-type: none"> The inlet and outlet of the rotary dryer shall be enclosed and ducted to a dust extraction and collection system such as a fabric filter. The particulate and gaseous concentration at the exhaust outlet of the dust collector shall not exceed the required limiting values; The bucket elevator shall be totally enclosed and the air be extracted and ducted to a dust collection system to meet the required particulates limiting value; All vibratory screens shall be totally enclosed and dust tight with close-fitted access inspection opening. Gaskets shall be installed to seal off any cracks and edges of any inspection openings; Chutes for carrying hot material shall be rigid and preferably fitted with abrasion resistant plate inside. They shall be inspected daily for leakages; All hot bins shall be totally enclosed and dust tight with close-fitted access inspection opening. Gaskets shall be installed to seal off any cracks and edges of any inspection openings. The air shall be extracted and ducted to a dust collection system to meet the required particulates limiting value; and 	Within Concrete Batching Plant / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Appropriate control measures shall be adopted in order to meet the required bitumen emission limit as well as the ambient odour level (2 odour units). 		
			<p>Material transportation</p> <ul style="list-style-type: none"> The loading, unloading, handling, transfer or storage of other raw materials which may generate airborne dust emissions such as crushed rocks, sands, stone aggregates, reject fines, shall be carried out in such a manner as to minimize dust emissions; Roadways from the entrance of the plant to the product loading points and/or any other working areas where there are regular movements of vehicles shall be paved or hard surfaced; and Haul roads inside the Works shall be adequately wetted with water and/or chemical suppressants by water trucks or water sprayers. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Control of emissions from bitumen decanting</p> <ul style="list-style-type: none"> The heating temperature of the particular bitumen type and grade shall not exceed the corresponding temperature limit of the same type listed in Appendix 1 of the Guidance Note; Tamper-free high temperature cut-off device shall be provided to shut off the fuel supply or electricity in case the upper limit for bitumen temperature is reached; Proper chimney for the discharge of bitumen fumes shall be provided at high level; The emission of bitumen fumes shall not exceed the required emission limit; and The air-to-fuel ratio shall be properly controlled to allow complete combustion of the fuel. The fuel burners, if any, shall be maintained properly and free from carbon deposits in the burner nozzles. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Liquid fuel</p> <ul style="list-style-type: none"> The receipt, handling and storage of liquid fuel shall be carried out so as to prevent the release of emissions of organic vapours and/or other noxious and offensive emissions to the air. 	Within Concrete Batching Plant / Duration of the construction phase	I
			<p>Housekeeping</p> <ul style="list-style-type: none"> A high standard of housekeeping shall be maintained. Waste material, spillage and scattered piles gathered beneath belt conveyors, inside and around enclosures shall be cleared frequently. The minimum clearing frequency is on a weekly basis. 	Within Concrete Batching Plant / Duration of the construction phase	I
5.2.6.7	2.1	-	<p>Best Practices for Rock Crushing Plants</p> <p>The relevant best practices for dust control as stipulated in the Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Plant) BPM 11/1 (95) as well as in the future Specified Process licence should be adopted. These include:</p> <p>Crushers</p>	Within Concrete Batching Plant / Duration of the construction phase	N/A as there was no rock crushing plant at this stage

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> The outlet of all primary crushers, and both inlet and outlet of all secondary and tertiary crushers, if not installed inside a reasonably dust tight housing, shall be enclosed and ducted to a dust extraction and collection system such as a fabric filter; The inlet hopper of the primary crushers shall be enclosed on top and 3 sides to contain the emissions during dumping of rocks from trucks. The rock while still on the trucks shall be wetted before dumping; Water sprayers shall be installed and operated in strategic locations at the feeding inlet of crushers; and Crusher enclosures shall be rigid and be fitted with self-closing doors and close-fitting entrances and exits. Where conveyors pass through the crusher enclosures, flexible covers shall be installed at entries and exits of the conveyors to the enclosure. 		
			<p>Vibratory screens and grizzlies</p> <ul style="list-style-type: none"> All vibratory screens shall be totally enclosed in a housing. Screenhouses shall be rigid and reasonably dust tight with self-closing doors or close-fitted entrances and exits for access. Where conveyors pass through the screenhouse, flexible covers shall be installed at entries and exits of the conveyors to the housing. Where containment of dust within the screenhouse structure is not successful then a dust extraction and collection system shall be provided; and All grizzlies shall be enclosed on top and 3 sides and sufficient water sprayers shall be installed at their feeding and outlet areas. 	Within Concrete Batching Plant / Duration of the construction phase	N/A as there was no rock crushing plant at this stage
			<p>Belt conveyors</p> <ul style="list-style-type: none"> Except for those conveyors which are placed within a totally enclosed structure such as a screenhouse or those erected at the ground level, all conveyors shall be totally enclosed with windshield on top and 2 sides; Effective belt scraper such as the pre-cleaner blades made by hard wearing materials and provided with pneumatic tensioner, or equivalent device, shall be installed at the head pulley of designated conveyor as required to dislodge fine dust particles that may adhere to the belt surface and to reduce carry-back of fine materials on the return belt. Bottom plates shall also be provided for the conveyor unless it has been demonstrated that the corresponding belt scraper is effective and well maintained to prevent falling material from the return belt; and <p>Except for those transfer points which are placed within a totally enclosed structure such as a screenhouse, all transfer points to and from conveyors shall be enclosed. Where containment of dust within the enclosure is not successful, then water sprayers shall be provided. Openings for any enclosed structure for the passage of conveyors shall be fitted with flexible seals.</p>	Within Concrete Batching Plant / Duration of the construction phase	N/A as there was no rock crushing plant at this stage
			<p>Storage piles and bins</p> <ul style="list-style-type: none"> Where practicable, free falling transfer points from conveyors to stockpiles shall be fitted with flexible curtains or be enclosed with chutes designed to minimize the drop height. Water sprays shall also be used where required. 	Within Concrete Batching Plant / Duration of the construction phase	N/A as there was no rock crushing plant at this stage

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> The surface of all surge piles and stockpiles of blasted rocks or aggregates shall be kept sufficiently wet by water spraying wherever practicable; All open stockpiles for aggregates of size in excess of 5 mm shall be kept sufficiently wet by water spraying where practicable; or The stockpiles of aggregates 5 mm in size or less shall be enclosed on 3 sides or suitably located to minimize wind-whipping. Save for fluctuations in stock or production, the average stockpile shall stay within the enclosure walls and in no case the height of the stockpile shall exceed twice the height of the enclosure walls; and Scattered piles gathered beneath belt conveyors, inside and around enclosures shall be cleared regularly. 		
			Rock drilling equipment <ul style="list-style-type: none"> Appropriate dust control equipment such as a dust extraction and collection system shall be used during rock drilling activities. 	Within Concrete Batching Plant / Duration of the construction phase	N/A as there was no rock crushing plant at this stage
Hazard to Human Life – Construction Phase					
Table 6.40	3.2	-	<ul style="list-style-type: none"> Precautionary measures should be established to request barges to move away during typhoons. 	Construction Site / Construction Period	I
Table 6.40	3.2	-	<ul style="list-style-type: none"> An appropriate marine traffic management system should be established to minimize risk of ship collision. 	Construction Site / Construction Period	I
Table 6.40	3.2	-	<ul style="list-style-type: none"> Location of all existing hydrant networks should be clearly identified prior to any construction works. 	Construction Site / Construction Period	I
Noise Impact – Construction Phase					
7.5.6	4.3	-	Good Site Practice Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction: <ul style="list-style-type: none"> only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works; machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs; mobile plant should be sited as far away from NSRs as possible; and material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities. 	Within the Project site / During construction phase / Prior to commencement of operation	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
7.5.6	4.3	-	Adoption of QPME <ul style="list-style-type: none"> QPME should be adopted as far as applicable. 	Within the Project site / During construction phase / Prior to commencement of operation	I
7.5.6	4.3	-	Use of Movable Noise Barriers <ul style="list-style-type: none"> Movable noise barriers should be placed along the active works area and mobile plants to block the direct line of sight between PME and the NSRs. 	Within the Project site / During construction phase / Prior to commencement of operation	I
7.5.6	4.3	-	Use of Noise Enclosure/ Acoustic Shed <ul style="list-style-type: none"> Noise enclosure or acoustic shed should be used to cover stationary PME such as air compressor and generator. 	Within the Project site / During construction phase / Prior to commencement of operation	I
Water Quality Impact – Construction Phase					
8.8.1.2 and 8.8.1.3	5.1	2.26	Marine Construction Activities <u>General Measures to be Applied to All Works Areas</u> <ul style="list-style-type: none"> Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation; Use of Lean Material Overboard (LMOB) systems shall be prohibited; Excess materials shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessels are moved; Plants should not be operated with leaking pipes and any pipe leakages shall be repaired quickly; Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; All vessels shall be sized such that adequate clearance is maintained between vessels and the seabed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site; and For ground improvement activities including DCM, the wash water from cleaning of the drilling shaft should be appropriately treated before discharge. The Contractor should ensure the wastewater meets the WPCO/TM requirements before discharge. No direct discharge of contaminated water is permitted. 	Within construction site / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<u>Specific Measures to be Applied to All Works Areas</u> <ul style="list-style-type: none"> The daily maximum production rates shall not exceed those assumed in the water quality assessment in the EIA report; A maximum of 10 % fines content to be adopted for sand blanket and 20 % fines content for marine filling below +2.5 mPD prior to substantial completion of seawall (until end of Year 2017) shall be specified in the works contract document; 	Within construction site / Duration of the construction phase	I – For marine filling
			<ul style="list-style-type: none"> An advance seawall of at least 200m to be constructed (comprising either rows of contiguous permanent steel cells completed above high tide mark or partially completed seawalls with rock core to high tide mark and filter layer on the inner side) prior to commencement of marine filling activities; 		C – Completed in Nov 2020 for sand blanket
			<ul style="list-style-type: none"> Closed grab dredger shall be used to excavate marine sediment; Silt curtains surrounding the closed grab dredger shall be deployed in accordance with the Silt Curtain Deployment Plan; and 		I (The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> The Silt Curtain Deployment Plan shall be implemented. 		I
			<u>Specific Measures to be Applied to Land Formation Activities prior to Commencement of Marine Filling Works</u> <ul style="list-style-type: none"> Double layer 'Type III' silt curtains to be applied around the active eastern works areas prior to commencement of sand blanket laying activities. The silt curtains shall be configured to minimise SS release during ebb tides. A silt curtain efficiency test shall be conducted to validate the performance of the silt curtains; 	Within construction site / Duration of the construction phase	N/A (The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> Double layer silt curtains to enclose WSRs C7a and silt screens installed at the intake points for both WSR C7a and C8 prior to commencement of construction; and 		I – For C7a
					C – Completed in Dec 2021 for C8 *(The requirement of silt curtain / screen has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> The silt curtains and silt screens should be regularly checked and maintained. 		I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<u>Specific Measures to be Applied to Land Formation Activities during Marine Filling Works</u> <ul style="list-style-type: none"> Double layer 'Type II' or 'Type III' silt curtains to be applied around the eastern openings between partially completed seawalls prior to commencement of marine filling activities. The silt curtains shall be configured to minimise SS release during ebb tides; 	Within construction site / Duration of the construction phase	I *(The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> Double layer silt curtains to be applied at the south-western opening prior to commencement of marine filling activities; 		N/A (The arrangement of silt curtain has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> Double layer silt curtain to enclose WSR C7a and silt screens installed at the intake points for both WSR C7a and C8 prior to commencement of marine filling activities; and 		I – For C7a C – Completed in Dec 2021 for C8 (The requirement of silt curtain / screen has been modified. The details can be referred to Silt Curtain Deployment Plan)
			<ul style="list-style-type: none"> The silt curtains and silt screens should be regularly checked and maintained. 		I
			<u>Specific Measures to be Applied to the Field Joint Excavation Works for the Submarine Cable Diversion</u> <ul style="list-style-type: none"> Only closed grabs designed and maintained to avoid spillage shall be used and should seal tightly when operated. Excavated materials shall be disposed at designated marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions; and Silt curtains surrounding the closed grab dredger to be deployed as a precautionary measure. 	Within construction site / Duration of the construction phase	N/A – the field joint excavation works for the submarine cable diversion will no longer be conducted anymore
8.8.1.4	5.1	-	Modification of the Existing Seawall <ul style="list-style-type: none"> Silt curtains shall be deployed around the seawall modification activities to completely enclose the active works areas, and care should be taken to avoid splashing of rockfill / rock armour into the surrounding marine environment. For the connecting sections with the existing outfalls, works for these connection areas should be undertaken during the dry season in order that individual drainage culvert cells may be isolated for interconnection works. 	At the existing northern seawall / Duration of the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
8.8.1.5	5.1	-	Construction of New Stormwater Outfalls and Modifications to Existing Outfalls <ul style="list-style-type: none"> During operation of the temporary drainage channel, runoff control measures such as bunding or silt fence shall be provided on both sides of the channel to prevent accumulation and release of SS via the temporary channel. Measures should also be taken to minimise the ingress of site drainage into the culvert excavations. 	Within construction site / Duration of the construction phase	I
8.8.1.6 8.8.1.7	5.1	2.27	Piling Activities for Construction of New Runway Approach Lights and HKIAAA Marker Beacons <p>Silt curtains shall be deployed around the piling activities to completely enclose the piling works and care should be taken to avoid spillage of excavated materials into the surrounding marine environment.</p>	Within construction site / Duration of the construction phase	C – For approach lights N/A for marker beacons as HKIAAA Marker Beacons would be replaced by buoys C – Completed in Oct 2021
			<p><u>For construction of the eastern approach lights at the CMPs</u></p> <ul style="list-style-type: none"> Ground improvement via DCM using a close-spaced layout shall be completed prior to commencement of piling works; Steel casings shall be installed to enclose the excavation area prior to commencement of excavation; The excavated materials shall be removed using a closed grab within the steel casings; No discharge of the cement mixed materials into the marine environment will be allowed; and Excavated materials shall be treated and reused on-site. 		
8.8.1.8	5.1	-	Construction of Site Runoff and Drainage <p>The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended:</p>	Within construction site / Duration of the construction phase	
			<ul style="list-style-type: none"> Install perimeter cut-off drains to direct off-site water around the site and implement internal drainage, erosion and sedimentation control facilities. Channels, earth bunds or sandbag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the Contractors prior to the commencement of construction (for works areas located on the existing Airport island) or as soon as the new land is completed (for works areas located on the new landform); 		I
			<ul style="list-style-type: none"> Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM-DSS standards under the WPCO. The design of efficient silt removal facilities should make reference to the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the Contractors prior to the commencement of construction; 		I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly; 		
			<ul style="list-style-type: none"> Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities; 		
			<ul style="list-style-type: none"> In the event that contaminated groundwater is identified at excavation areas, this should be treated on-site using a suitable wastewater treatment process. The effluent should be treated according to the requirements of the TM-DSS standards under the WPCO prior to discharge to foul sewers or collected for proper disposal off-site. No direct discharge of contaminated groundwater is permitted; and 		
			<ul style="list-style-type: none"> All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exits. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. All washwater should be treated according to the requirements of the TM-DSS standards under the WPCO prior to discharge. 		
			<ul style="list-style-type: none"> Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the construction materials, soil, silt or debris from washing away into the drainage system; 		
			<ul style="list-style-type: none"> Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and to prevent stormwater runoff being directed into foul sewers; and 		
			<ul style="list-style-type: none"> Precautionary measures should be taken at any time of the year when rainstorms are likely. Actions to be taken when a rainstorm is imminent or forecasted are summarized in Appendix A2 of ProPECC Note PN 1/94. This includes actions to be taken during and/or after rainstorms. Particular attention should be paid to the control of silty surface runoff during storm events. 		
8.8.1.9	5.1	-	Sewage Effluent from Construction Workforce <ul style="list-style-type: none"> Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. 	Within construction site / During construction phase	

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
8.8.1.10 8.8.1.11	5.1		General Construction Activities <ul style="list-style-type: none"> Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used; and Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. 	Within construction site / During construction phase	I
8.8.1.12 8.8.1.13	5.1	2.28	Drilling Activities for the Submarine Aviation Fuel Pipelines To prevent potential water quality impacts at Sha Chau, the following measures shall be applied: <ul style="list-style-type: none"> A 'zero-discharge' policy shall be applied for all activities to be conducted at Sha Chau; No bulk storage of chemicals shall be permitted; and A containment pit shall be constructed around the drill holes. This containment pit shall be lined with impermeable lining and bunded on the outside to prevent inflow from off-site areas. 	Within construction site / During construction phase	C – Completed in Jan 2019
			At the airport island side of the drilling works, the following measures shall be applied for treatment of wastewater: <ul style="list-style-type: none"> During pipe cleaning, appropriate desilting or sedimentation device should be provided on site for treatment before discharge. The Contractor should ensure discharge water from the sedimentation tank meet the WPCO/TM requirements before discharge; and Drilling fluid used in drilling activities should be reconditioned and reused as far as possible. Temporary enclosed storage locations should be provided on-site for any unused chemicals that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 	Within construction site / During construction phase	C – Completed in Jan 2019
Waste Management Implication – Construction Phase					
10.5.1.1	7.1	-	Opportunities to minimise waste generation and maximise the reuse of waste materials generated by the project have been incorporated where possible into the planning, design and construction stages, and the following measures have been recommended: <ul style="list-style-type: none"> The relevant construction methods (particularly for the tunnel works) and construction programme have been carefully planned and developed to minimise the extent of excavation and to maximise the on-site reuse of inert C&D materials generated by the project as far as practicable. Temporary stockpiling areas will also be provided to facilitate on-site reuse of inert C&D materials; Priority should be given to collect and reuse suitable inert C&D materials generated from other concurrent projects and the Government's PFRF as fill materials for the proposed land formation works; 	Project Site Area / During design and construction phase	I
					I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Only non-dredged ground improvement methods should be adopted in order to completely avoid the need for dredging and disposal of marine sediment for the proposed land formation work; 		I
			<ul style="list-style-type: none"> Excavation work for constructing the APM tunnels, BHS tunnels and airside tunnels will not be down to the CMPs beneath the fill materials in order to avoid excavating any sediments; and 		I
			<ul style="list-style-type: none"> For the marine sediments expected to be excavated from the piling works of TRC, APM & BHS tunnels, airside tunnels and other facilities on the proposed land formation area, piling work of marine sections of the approach lights and HKIAAAA beacons, basement works for some of T2 expansion area and excavation works for the proposed APM depot should be treated and reused on-site as backfilling materials, although required treatment level / detail and the specific re-use mode are under development. 		I
10.5.1.1	7.1	-	<p>The following good site practices should be performed during the construction activities include:</p> <ul style="list-style-type: none"> Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; Training of site personnel in proper waste management and chemical waste handling procedures; Provision of sufficient waste disposal points and regular collection for disposal; Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks by tarpaulin/ similar material or by transporting wastes in enclosed containers. The cover should be extended over the edges of the sides and tailboards; Stockpiles of C&D materials should be kept wet or covered by impervious sheets to avoid wind-blown dust; All dusty materials including C&D materials should be sprayed with water immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling at the barging points/ stockpile areas; C&D materials to be delivered to and from the project site by barges or by trucks should be kept wet or covered to avoid wind-blown dust; The speed of the trucks including dump trucks carrying C&D or waste materials within the site should be controlled to about 10 km/hour in order to reduce the adverse dust impact and secure the safe movement around the site; and To avoid or minimise dust emission during transport of C&D or waste materials within the site, each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials. Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet. 	Project Site Area / Construction Phase	I
10.5.1.3	7.1	-	<p>The following practices should be performed to achieve waste reduction include:</p> <ul style="list-style-type: none"> Use of steel or aluminium formworks and falseworks for temporary works as far as practicable; 	Project Site Area / Construction Phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Adoption of repetitive design to allow reuse of formworks as far as practicable; Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; Any unused chemicals or those with remaining functional capacity should be collected for reused as far as practicable; Proper storage and site practices to minimise the potential for damage or contamination of construction materials; and Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 		
10.5.1.5	7.1		Inert and non-inert C&D materials should be handled and stored separately to avoid mixing the two types of materials.	Project Site Area / Construction Phase	I
10.5.1.5	7.1	-	Any recyclable materials should be segregated from the non-inert C&D materials for collection by reputable licensed recyclers whereas the non-recyclable waste materials should be disposed of at the designated landfill site by a reputable licensed waste collector.	Project Site Area / Construction Phase	I
10.5.1.6	7.1	-	A trip-ticket system promulgated shall be developed in order to monitor the off-site delivery of surplus inert C&D materials that could not be reused on-site for the proposed land formation work at the PFRF and to control fly tipping.	Project Site Area / Construction Phase	I
10.5.1.6	7.1	2.32	The Contractor should prepare and implement a Waste Management Plan detailing various waste arising and waste management practices.	Construction Phase	I
10.5.1.16	7.1	-	<p>The following mitigation measures are recommended during excavation and treatment of the sediments:</p> <ul style="list-style-type: none"> On-site remediation should be carried out in an enclosed area in order to minimise odour/dust emissions; The loading, unloading, handling, transfer or storage of treated and untreated sediment should be carried out in such a manner to prevent or minimise dust emissions; All practical measures, including but not limited to speed control for vehicles, should be taken to minimise dust emission; Good housekeeping should be maintained at all times at the sediment treatment facility and storage area; Treated and untreated sediment should be clearly separated and stored separately; and Surface runoff from the enclosed area should be properly collected and stored separately, and then properly treated to levels in compliance with the relevant effluent standards as required by the Water Pollution Control Ordinance before final discharge. 	Project Site Area / Construction Phase	I I I I I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
10.5.1.18	7.1	-	<p>The marine sediments to be removed from the cable field joint area would be disposed of at the designated disposal sites to be allocated by the MFC. The following mitigation measures should be strictly followed to minimise potential impacts on water quality during transportation of the sediments requiring Type 1 disposal:</p> <ul style="list-style-type: none"> Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material; Monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by EPD; and Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. 	Project Site Area / Construction Phase	N/A – the field joint excavation works for the submarine cable diversion will no longer be conducted anymore
10.5.1.19	7.1	-	<p>Contractor should register with the EPD as a chemical waste producer and to follow the relevant guidelines. The following measures should be implemented:</p> <ul style="list-style-type: none"> Good quality containers compatible with the chemical wastes should be used; Incompatible chemicals should be stored separately; Appropriate labels must be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.; and The contractor will use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	Project Site Area / Construction Phase	I
10.5.1.20	7.1	-	<p>General refuse should be stored in enclosed bins or compaction units separated from inert C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site for disposal at designated landfill sites. An enclosed and covered area should be provided to reduce the occurrence of 'windblown' light material.</p>	Project Site Area / Construction Phase	I
10.5.1.21	7.1	-	<p>The construction contractors will be required to regularly check and clean any refuse trapped or accumulated along the newly constructed seawall. Such refuse will then be stored and disposed of together with the general refuse.</p>	Project Site Area / Construction Phase	I
Land Contamination – Construction Phase					
11.10.1.2 to 11.10.1.3	8.1	2.32	<p>For areas inaccessible during site reconnaissance survey</p> <ul style="list-style-type: none"> Further site reconnaissance would be conducted once the areas are accessible in order to identify any land contamination concern for the areas. 	Project Site Area inaccessible during site reconnaissance / Prior to Construction Phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Subject to further site reconnaissance findings, a supplementary Contamination Assessment Plan (CAP) for additional site investigation (SI) (if necessary) may be prepared and submitted to EPD for endorsement prior to the commencement of SI at these areas. 		C – Completed in Jan 2018
			<ul style="list-style-type: none"> After completion of SI, the Contamination Assessment Report (CAR) will be prepared and submitted to EPD for approval prior to start of the proposed construction works at the golf course, the underground and above-ground fuel storage tank areas, emergency power generation units, airside petrol filling station and fuel tank room. 		I *(CAR for golf course and Terminal 2 emergency power supply system nos.1, 2, 3, 4 and 5 were submitted to EPD)
			<ul style="list-style-type: none"> Should remediation be required, Remediation Action Plan (RAP) and Remediation Report (RR) will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively. 		N/A as no remediation was required.
11.8.1.2	8.1	-	<p>If contaminated soil is identified, the following mitigation measures are for the excavation and transportation of contaminated materials (if any):</p> <ul style="list-style-type: none"> To minimize the incidents of construction workers coming in contact with any contaminated materials, bulk earth-moving excavation equipment should be employed; Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when working directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site; Stockpiling of contaminated excavated materials on site should be avoided as far as possible; The use of any contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out; Vehicles containing any excavated materials should be suitably covered to reduce dust emissions and/or release of contaminated wastewater; Truck bodies and tailgates should be sealed to prevent any discharge; Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping; Speed control for trucks carrying contaminated materials should be exercised. 8km/h is the recommended speed limit; Strictly observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354) and obtain all necessary permits where required; and Maintain records of waste generation and disposal quantities and disposal arrangements. 	Project Site Area / Construction Phase	N/A as no contaminated soil was found.

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
Terrestrial Ecological – Construction Phase					
12.10.1.1	9.2	2.14	Pre-construction Egretty Survey <ul style="list-style-type: none"> Conduct ecological survey for Sha Chau egretty to update the latest boundary of the egretty. 	Breeding season (April - July) prior to commencement of HDD drilling works at HKIA	C – Completed in Jan 2019
12.7.2.3 and 12.7.2.6	9.1	2.30	Avoidance and Minimisation of Direct Impact to Egretty <ul style="list-style-type: none"> The daylighting location will avoid direct encroachment to the Sheung Sha Chau egretty. The daylighting location and mooring of flat top barge, if required, will be kept away from the egretty; In any event, controls such as demarcation of construction site boundary and confining the lighting within the site will be practised to minimise disturbance to off-site habitat at Sheung Sha Chau Island; and The containment pit at the daylighting location shall be covered or camouflaged. 	During construction phase at Sheung Sha Chau Island	C – Completed in Jan 2019
12.7.2.5	9.1	2.30	Preservation of Nesting Vegetation <ul style="list-style-type: none"> The proposed daylighting location and the arrangement of connecting pipeline will avoid the need of tree cutting, therefore the trees that are used by ardeids for nesting will be preserved. 	During construction phase at Sheung Sha Chau Island	C – Completed in Jan 2019
12.7.2.4 and 12.7.2.6	9.1	2.30	Timing the Pipe Connection Works outside Ardeid's Breeding Season <ul style="list-style-type: none"> All HDD and related construction works on Sheung Sha Chau Island will be scheduled outside the ardeids' breeding season (between April and July). No night-time construction work will be allowed on Sheung Sha Chau Island during all seasons. 	During construction phase at Sheung Sha Chau Island	C – Completed in Jan 2019
12.10.1.1	9.3	-	Ecological Monitoring <ul style="list-style-type: none"> During the HDD construction works period from August to March, ecological monitoring will be undertaken monthly at the HDD daylighting location on Sheung Sha Chau Island to identify and evaluate any impacts with appropriate actions taken as required to address and minimise any adverse impact found. 	at Sheung Sha Chau Island	C – Completed in Jan 2019
Marine Ecological Impact – Pre-construction Phase					
13.11.4.1	10.2.2	-	<ul style="list-style-type: none"> Pre-construction phase Coral Dive Survey. 	HKIAAA artificial seawall	C – Completed in Jan 2016
Marine Ecological Impact – Construction Phase					
13.11.1.3 to 13.11.1.6	-	-	Minimisation of Land Formation Area <ul style="list-style-type: none"> Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for marine resources, especially the CWD population. 	Land formation footprint / during detailed design phase to completion of construction	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
13.11.1.7 to 13.11.1.10	-	2.31	Use of Construction Methods with Minimal Risk/Disturbance <ul style="list-style-type: none"> Use of non-dredge method for the main land formation and ancillary works including the diversion of the aviation fuel pipeline to the AFRF; 	During construction phase at marine works area	C – Completed in Jan 2019 for diversion of aviation fuel pipeline
			<ul style="list-style-type: none"> Use of Deep Cement Mixing (DCM) method instead of conventional seabed dredging for the land formation works to reduce the risk of negative impacts through the elevation of suspended solids and contaminants on CWDs, fisheries and the marine environment; 		I
			<ul style="list-style-type: none"> Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; 		C – Completed in Oct 2021 for new approach lights
			<ul style="list-style-type: none"> Avoid bored piling during CWD peak calving season (Mar to Jun); 		N/A for marker beacons as HKIAAAA Marker Beacons would be replaced by buoys
			<ul style="list-style-type: none"> Prohibition of underwater percussive piling; and 		I
			<ul style="list-style-type: none"> Use of horizontal directional drilling (HDD) method and water jetting methods for placement of submarine cables and pipelines to minimise the disturbance to the CWDs and other marine ecological resources. 		C – Completed in Jan 2019 for HDD works
13.11.2.1 to 13.11.2.7	-	-	Mitigation for Indirect Disturbance due to Deterioration of Water Quality <ul style="list-style-type: none"> Water quality mitigation measures during construction phases include consideration of alternative construction methods, deployment of silt curtain and good site practices; 	All works area during the construction phase	I
			<ul style="list-style-type: none"> Alternative construction methods including use of non-dredge methods for ground improvement (e.g. Deep Cement Mixing (DCM), prefabricated vertical drains (PVD), sand compaction piles, steel cells, stone columns and vertical sand drains); 		I
			<ul style="list-style-type: none"> Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and 		C – Completed in Oct 2021 for new approach lights
			<ul style="list-style-type: none"> Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to the CWDs and other marine ecological resources. 		C – Completed in Jan 2019 for HDD works
13.11.1.12	-	-	Strict Enforcement of No-Dumping Policy	All works area during the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> A policy prohibiting dumping of wastes, chemicals, oil, trash, plastic, or any other substance that would potentially be harmful to dolphins and/or their habitat in the work area; Mandatory educational programme of the no-dumping policy be made available to all construction site personnel for all project-related works; Fines for infractions should be implemented; and Unscheduled, on-site audits shall be implemented. 		
13.11.1.13	-	-	Good Construction Site Practices <ul style="list-style-type: none"> Regular inspection of the integrity and effectiveness of all silt curtains and monitoring of effluents to ensure that any discharge meets effluent discharge guidelines; Keep the number of working or stationary vessels present on-site to the minimum anytime; and Unscheduled, on-site audits for all good site practice restrictions should be conducted, and fines or penalties sufficient to be an effective deterrent need to be levied against violators. 	All works area during the construction phase	I
13.11.1.3 to 13.11.1.6	-	-	Minimisation of Land Formation Area <ul style="list-style-type: none"> Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for marine resources, especially the CWD population. 	Land formation footprint / during detailed design phase to completion of construction	I
13.11.5.4 to 13.11.5.13	10.3.1	-	SkyPier High Speed Ferries' Speed Restrictions and Route Diversions <ul style="list-style-type: none"> SkyPier HSFs operating to / from Zhuhai and Macau would divert north of SCLKC Marine Park with a 15 knot speed limit to apply for the part-journeys that cross high CWD abundance grid squares as indicatively shown in Drawing No. MCL/P132/EIA/13-023 of the EIA Report. Both the alignment of the northerly route and the portion of routings to be subject to the speed limit of 15 knots shall be finalised prior to commencement of construction based on the future review of up-to-date CWD abundance and EM&A data and taking reference to changes in total SkyPier HSF numbers; and A maximum of 10 knots will be enforced through the designated SCLKC Marine Park area at all times. 	Area between the footprint and SCLKC Marine Park during construction phase	I
			Other mitigation measures <ul style="list-style-type: none"> The ET will audit various parameters including actual daily numbers of HSFs, compliance with the 15-knot speed limit in the speed control zone and diversion compliance for SkyPier HSFs operating to / from Zhuhai and Macau; and The effectiveness of the CWD mitigation measures after implementation of initial six month SkyPier HSF diversion and speed restriction will be reviewed. 	Area between the footprint and SCLKC Marine Park during construction phase	I C – Completed in Sep 2016
13.11.5.14 to 13.11.5.18	10.3.1	2.31	Dolphin Exclusion Zone <ul style="list-style-type: none"> Establishment of a 24 hr Dolphin Exclusion Zone (DEZ) with a 250 m radius around the land formation works areas; 	Marine waters around land formation works area during construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> A DEZ would also be implemented during ground improvement works (e.g. DCM), water jetting works for submarine cables diversion, open trench dredging at the field joint locations and seawall construction; and A DEZ would also be implemented during bored piling work but as a precautionary measure only. 		I C – Completed in Oct 2021 for the bored piling work of New approach lights
13.11.5.19	10.4	2.31	Acoustic Decoupling of Construction Equipment <ul style="list-style-type: none"> Air compressors and other noisy equipment that must be mounted on steel barges should be acoustically-decoupled to the greatest extent feasible, for instance by using rubber or air-filled tyres; and Specific acoustic decoupling measures shall be specified during the detailed design of the project for use during the land formation works. 	Around coastal works area during construction phase	I
13.11.5.20	10.6.1	2.29	Spill Response Plan <ul style="list-style-type: none"> An oil and hazardous chemical spill response plan is proposed to be established during the construction phase as a precautionary measure so that appropriate actions to prevent or reduce risks to CWDs can be undertaken in the event of an accidental spillage. 	Construction phase	I
13.11.5.21 to 13.11.5.23	10.6.1	-	Construction Vessel Speed Limits and Skipper Training <ul style="list-style-type: none"> A speed limit of 10 knots should be strictly observed for construction vessels at areas with the highest CWD densities (as currently indicated by the 1x1km grid squares in Figure 6 of Appendix 13.2 of EIA report). Vessels traversing through the work areas should be required to use predefined and regular routes (which would presumably become known to resident dolphins) to reduce disturbance to cetaceans due to vessel movements. Specific marine routes shall be specified by the Contractor prior to construction commencing. 	All areas north and west of Lantau Island during construction phase	I
Fisheries Impact – Construction Phase					
14.9.1.2 to 14.9.1.5	-		Minimisation of Land Formation Area <ul style="list-style-type: none"> Minimise the overall size of the land formation needed for the additional facilities to minimise the overall loss of habitat for fisheries resources. 	Land formation footprint / during detailed design phase to completion of construction	I
14.9.1.6	-	-	Use of Construction Methods with Minimal Risk/Disturbance <ul style="list-style-type: none"> Use of non-dredge method for the main land formation and ancillary works including the diversion of the aviation fuel pipeline to the AFRF; 	During construction phase at marine works area	C – Completed in Jan 2019 for diversion of aviation fuel pipeline

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Use of Deep Cement Mixing (DCM) method instead of conventional seabed dredging for the land formation works to reduce the risk of negative impacts through the elevation of suspended solids and contaminants on fisheries and the marine environment; 		I
			<ul style="list-style-type: none"> Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and 		C – Completed in Oct 2021 for new approach lights N/A for marker beacons as HKIAAAA Marker Beacons would be replaced by buoys
			<ul style="list-style-type: none"> Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to fisheries resources. 		C – Completed in Jan 2019 for HDD works
14.9.1.11	-		Strict Enforcement of No-Dumping Policy <ul style="list-style-type: none"> A policy prohibiting dumping of wastes, chemicals, oil, trash, plastic, or any other substance that would potentially be harmful to dolphins and/or their habitat in the work area; Mandatory educational programme of the no-dumping policy be made available to all construction site personnel for all project-related works; Fines for infractions should be implemented; and Unscheduled, on-site audits shall be implemented. 	All works area during the construction phase	I
14.9.1.12	-		Good Construction Site Practices <ul style="list-style-type: none"> Regular inspection of the integrity and effectiveness of all silt curtains and monitoring of effluents to ensure that any discharge meets effluent discharge guidelines; Keep the number of working or stationary vessels present on-site to the minimum anytime; and Unscheduled, on-site audits for all good site practice restrictions should be conducted, and fines or penalties sufficient to be an effective deterrent need to be levied against violators. 	All works area during the construction phase	I
14.9.1.13 to 14.9.1.18	-		Mitigation for Indirect Disturbance due to Deterioration of Water Quality <ul style="list-style-type: none"> Water quality mitigation measures during construction phases include consideration of alternative construction methods, deployment of silt curtain and good site practices; Alternative construction methods including use of non-dredge methods for ground improvement (e.g. Deep Cement Mixing (DCM), prefabricated vertical drains (PVD), sand compaction piles, steel cells, stone columns and vertical sand drains); 	All works area during the construction phase	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
			<ul style="list-style-type: none"> Use of bored piling in short duration to form the new approach lights and marker beacons for the new runway; and 		C – Completed in Oct 2021 for new approach lights N/A for marker beacons as HKIAAAA Marker Beacons would be replaced by buoys
			<ul style="list-style-type: none"> Use of horizontal directional drilling (HDD) method and water jetting methods for placement of undersea cables and pipelines to minimise the disturbance to fisheries resources. 		C – Completed on Jan 2019 for HDD work
Landscape and Visual Impact – Construction Phase					
Table 15.6	12.3	-	CM1 - The construction area and contractor's temporary works areas should be minimised to avoid impacts on adjacent landscape.	All works areas for duration of works; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM2 - Reduction of construction period to practical minimum.	All works areas for duration of works; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM3 - Phasing of the construction stage to reduce visual impacts during the construction phase.	All works areas for duration of works; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM4 - Construction traffic (land and sea) including construction plants, construction vessels and barges should be kept to a practical minimum.	All works areas for duration of works; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM5 - Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.	All works areas for duration of works; Upon handover and completion of works. – may be disassembled in phases.	I

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
Table 15.6	12.3	-	CM6 - Avoidance of excessive height and bulk of site buildings and structures.	New passenger concourse, terminal 2 expansion and other proposed airport related buildings and structures under the project; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM7 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	All works areas for duration of works; Upon handover and completion of works. – may be disassembled in phases.	I
Table 15.6	12.3	-	CM8 - All existing trees shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas.	All existing trees to be retained; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM9 - Trees unavoidably affected by the works shall be transplanted where practical. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.	All existing trees to be affected by the works; Upon handover and completion of works.	I
Table 15.6	12.3	-	CM10 - Land formation works shall be followed with advanced hydroseeding around taxiways and runways as soon as practical.	All affected existing grass areas around runways and verges/Duration of works; Upon handover and completion of works.	I
Cultural Heritage Impact – Construction Phase					
Not applicable to the construction stage of this project.					
Health Impact – Aircraft Emissions					
Not applicable to the construction stage of this project.					

EIA Ref.	EM&A Ref.	EP Condition	Environmental Protection Measures	Location / Duration of measures Timing of completion of measures	Mitigation Measures Implemented?^
Health Impact – Aircraft Noise					
Not applicable to the construction stage of this project.					

Notes:

“ - ” For items denoted as “ - ” provided under the columns of EM&A Ref. or EP Condition, environmental protection measures should be referred to the relevant paragraph(s) / table(s) in the approved EIA Report.

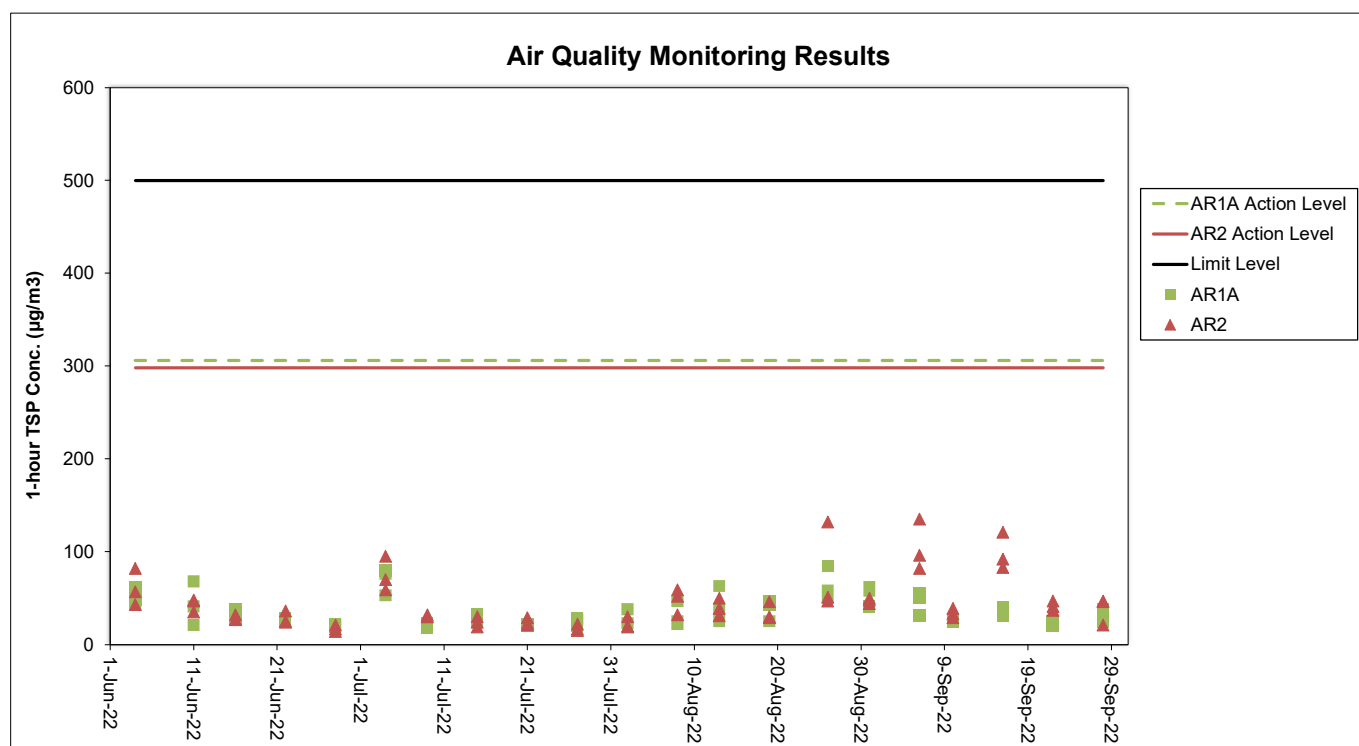
“ I ” Implemented and on-going where applicable.

“ N/A ” Not applicable to the construction works implemented during the reporting month.

“ ^ ” Checked by ET through site inspection and record provided by the Contractor.

Appendix C. Monitoring Results

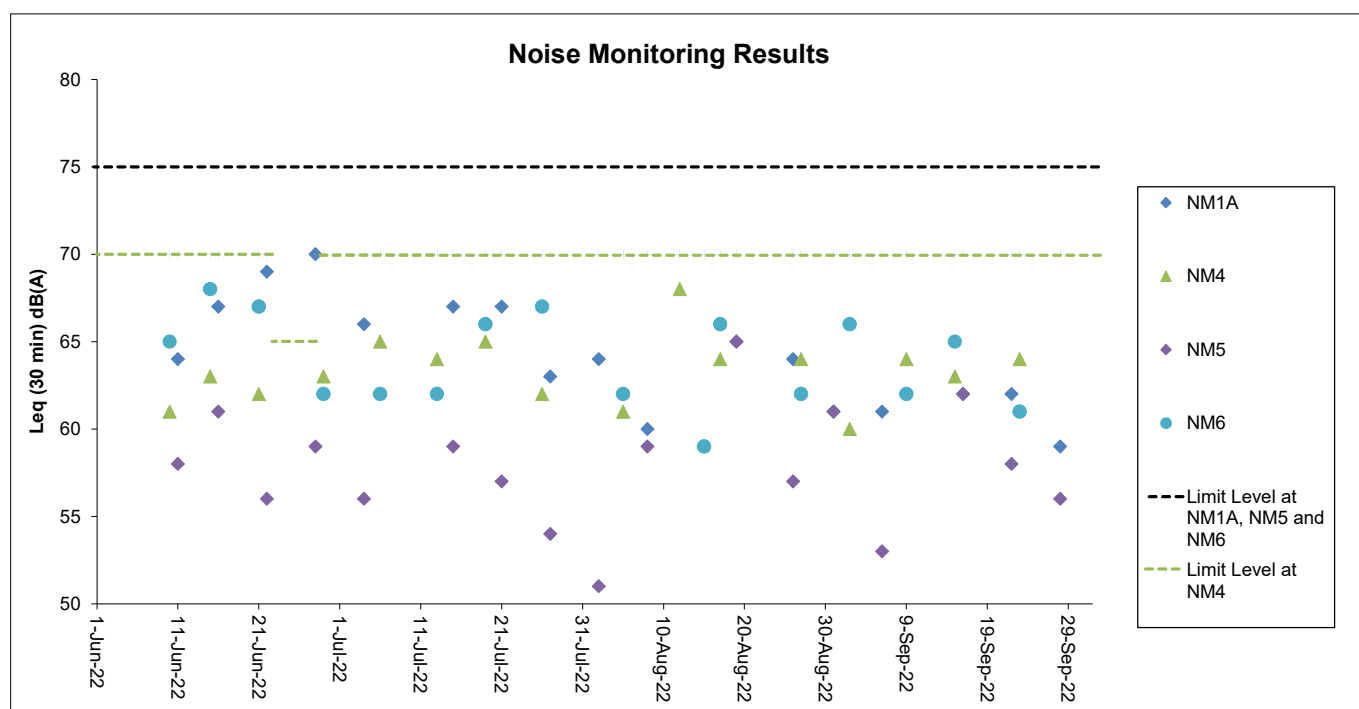
Air Quality Monitoring Results



Notes:

1. The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included filling, seawall construction and ground improvement works, together with runway, taxiways, concourse and associated works. Land-based works on existing airport island involved mainly airfield works, Terminal 2 expansion works, modification and tunnel work for Automated People Mover (APM) and Baggage Handling System (BHS), and preparation work for utilities, with activities include road and drainage works, cable ducting, demolition, piling, and excavation works.
2. General weather condition during monitoring ranged from sunny to rainy. Detailed meteorological conditions can be referred to Table 2.3 of this Report and corresponding Monthly EM&A Reports.
3. QA/ QC requirements as stipulated in the EM&A Manual were carried out during measurement.

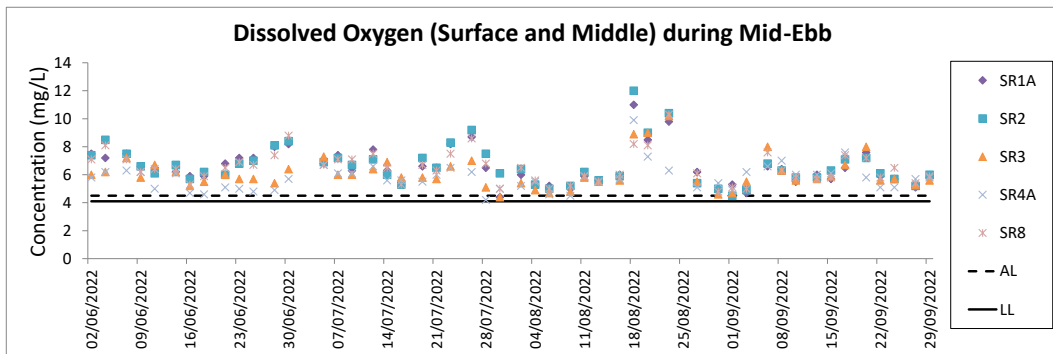
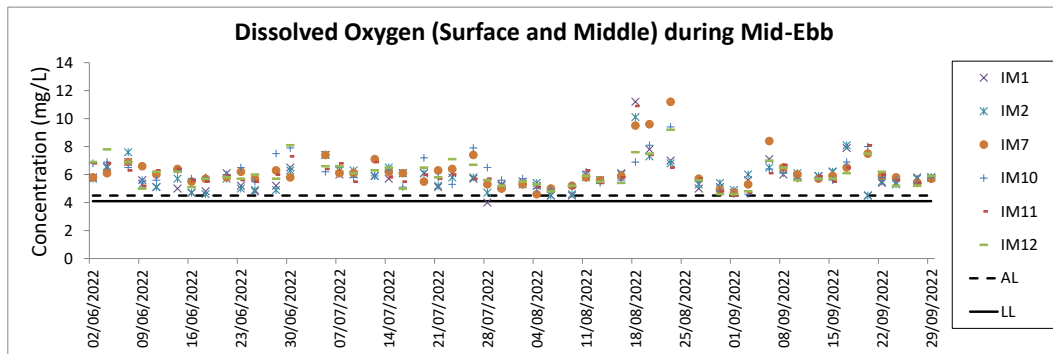
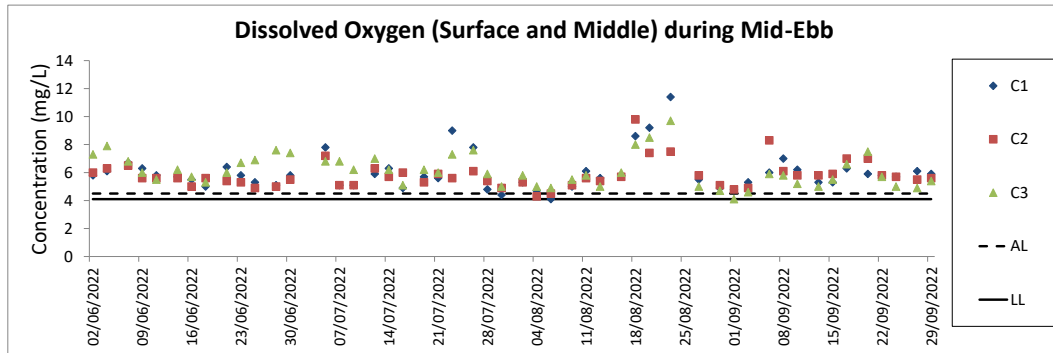
Noise Monitoring Results



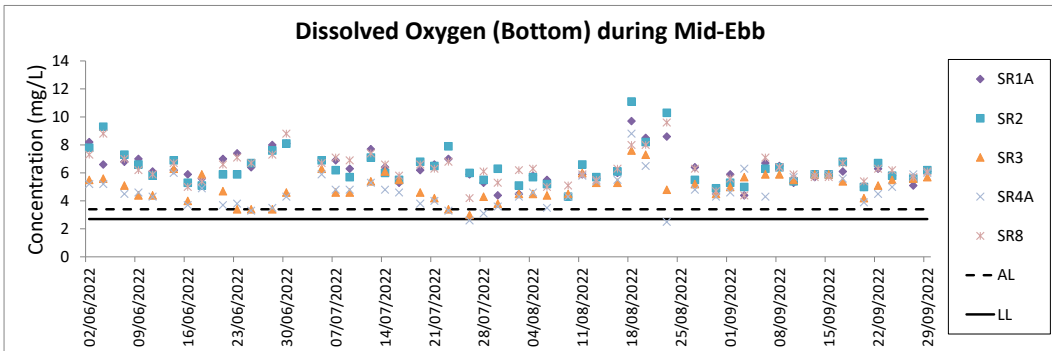
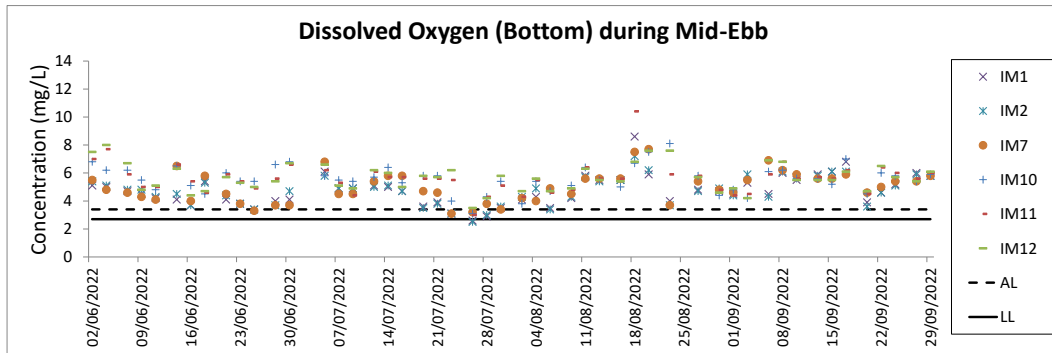
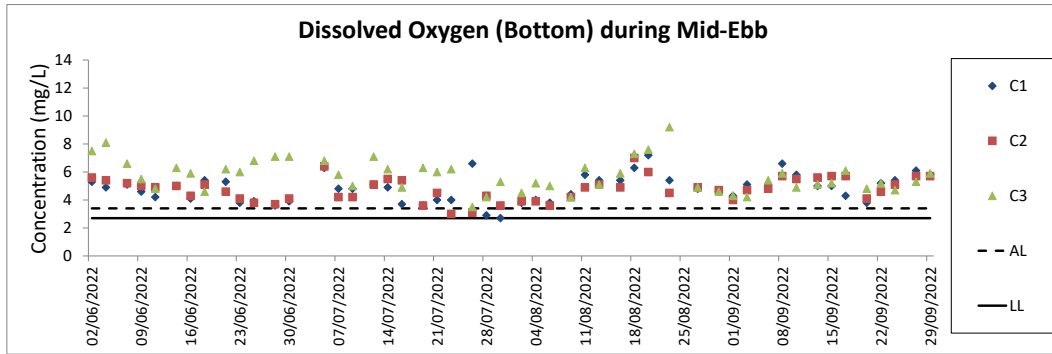
Notes:

1. The Limit Level is reduced to 70dB(A) for school and 65dB(A) during school examination period at NM4. No school examination took place during this reporting period.
2. The key activities of the Project carried out in the reporting period included reclamation works and land-based works. Works in the reclamation areas included filling, seawall construction and ground improvement works, together with runway, taxiways, concourse and associated works. Land-based works on existing airport island involved mainly airfield works, Terminal 2 expansion works, modification and tunnel work for Automated People Mover (APM) and Baggage Handling System (BHS), and preparation work for utilities, with activities include road and drainage works, cable ducting, demolition, piling, and excavation works.
3. General weather condition during monitoring ranged from sunny to rainy. Detailed meteorological conditions can be referred to Table 2.6 of this Report and corresponding Monthly EM&A Reports.
4. QA/ QC requirements as stipulated in the EM&A Manual were carried out during measurement.

Water Quality Monitoring Results

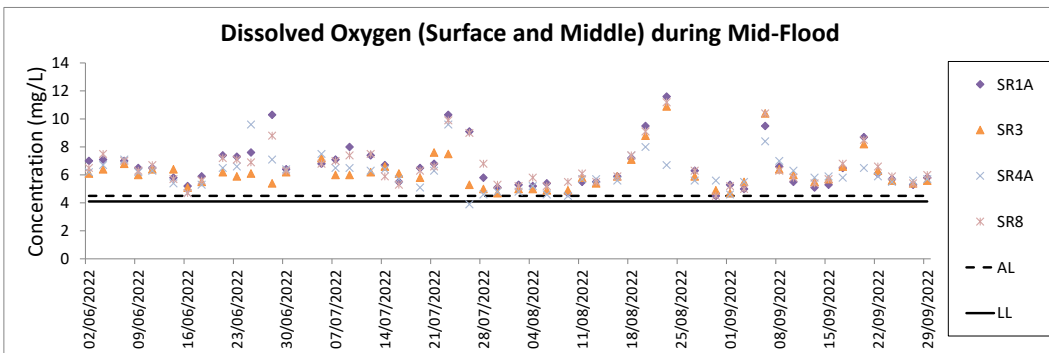
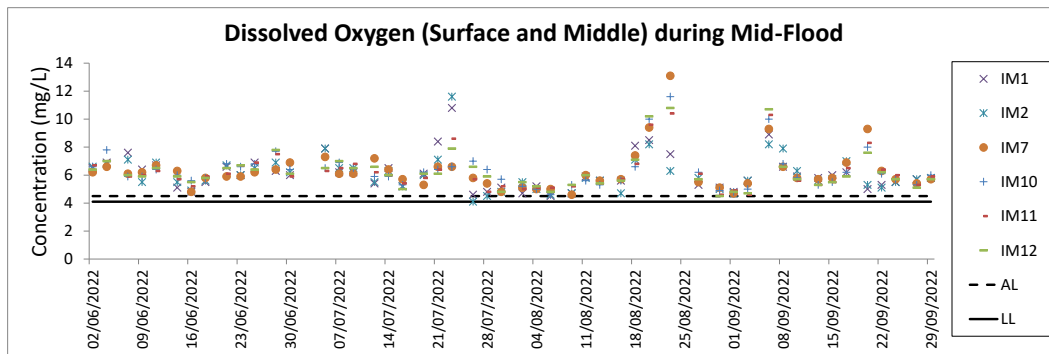
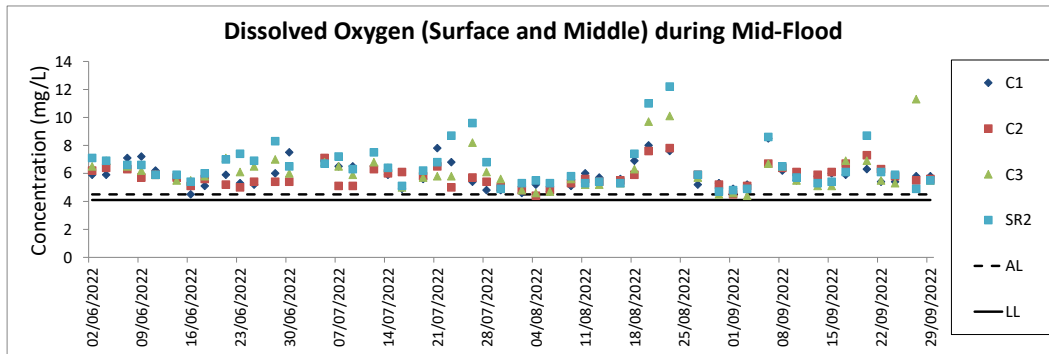


- Notes:
1. The key marine works activities of the Project during monitoring included filling, seawall construction and ground improvement works, together with runway, taxiways, concourse and associated works.
 2. General weather condition during monitoring ranged from sunny to rainy, with sea condition ranged from calm to rough. Detailed meteorological conditions can be referred to Table 2.11 of this Report and corresponding Monthly EM&A Reports.
 3. QA/ QC requirements as stipulated in the EM&A Manual were carried out during measurement.
 4. The monitoring sessions on 2 July 2022 were cancelled due to No. 8 Southeast Gale or Storm Signal.
 5. The monitoring sessions on 25 August 2022 were cancelled due to Strong Wind Signal No.3 and No. 8 Southeast Gale or Storm Signal in force.



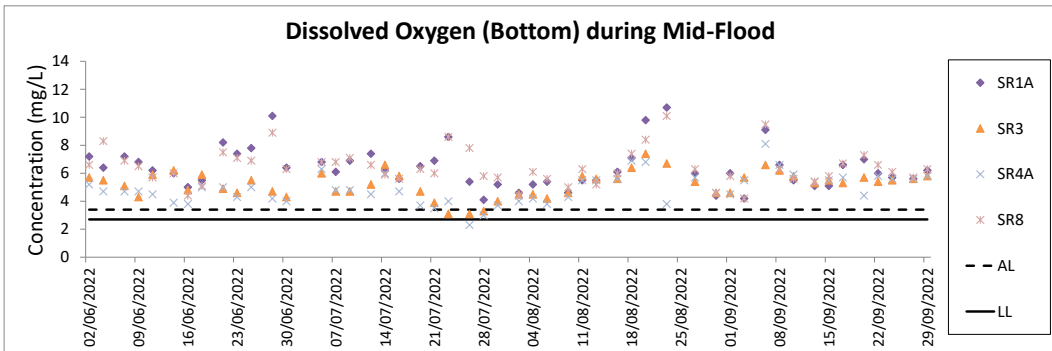
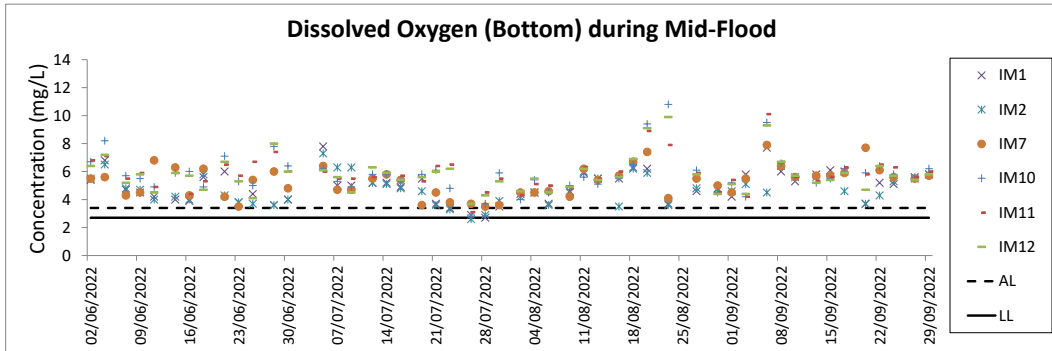
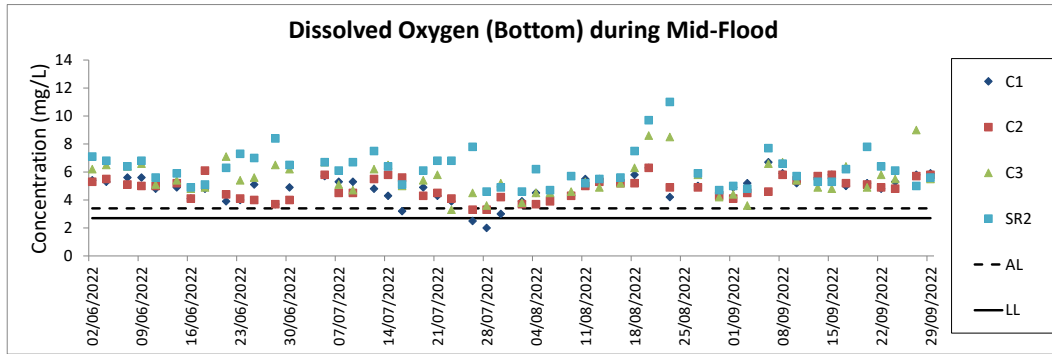
Notes:

1. The key marine works activities of the Project during monitoring included filling, seawall construction and ground improvement works, together with runway, taxiways, concourse and associated works.
2. General weather condition during monitoring ranged from sunny to rainy, with sea condition ranged from calm to rough. Detailed meteorological conditions can be referred to Table 2.11 of this Report and corresponding Monthly EM&A Reports.
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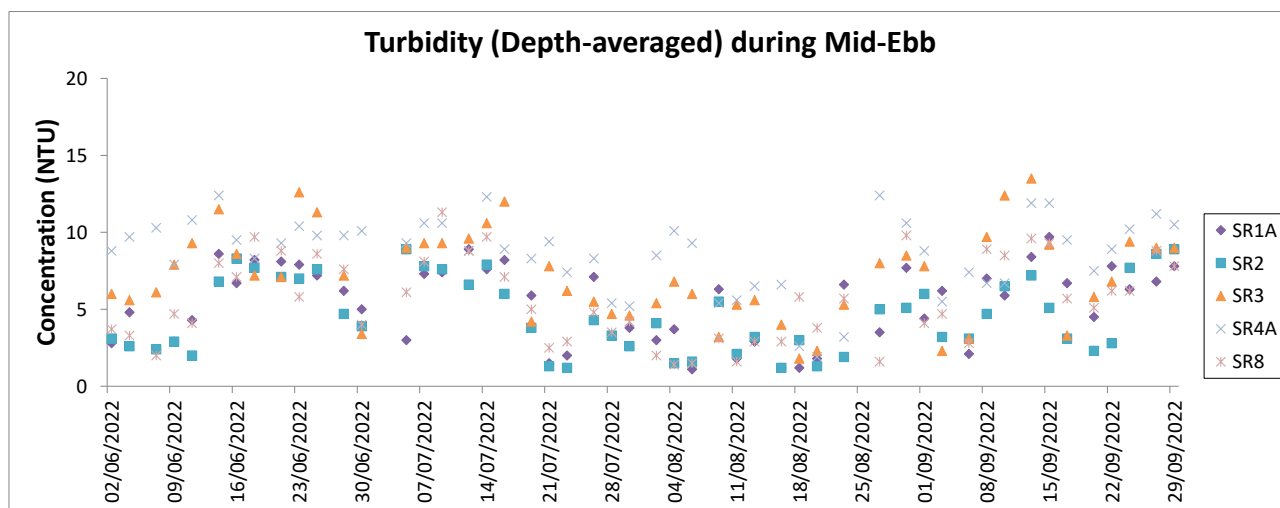
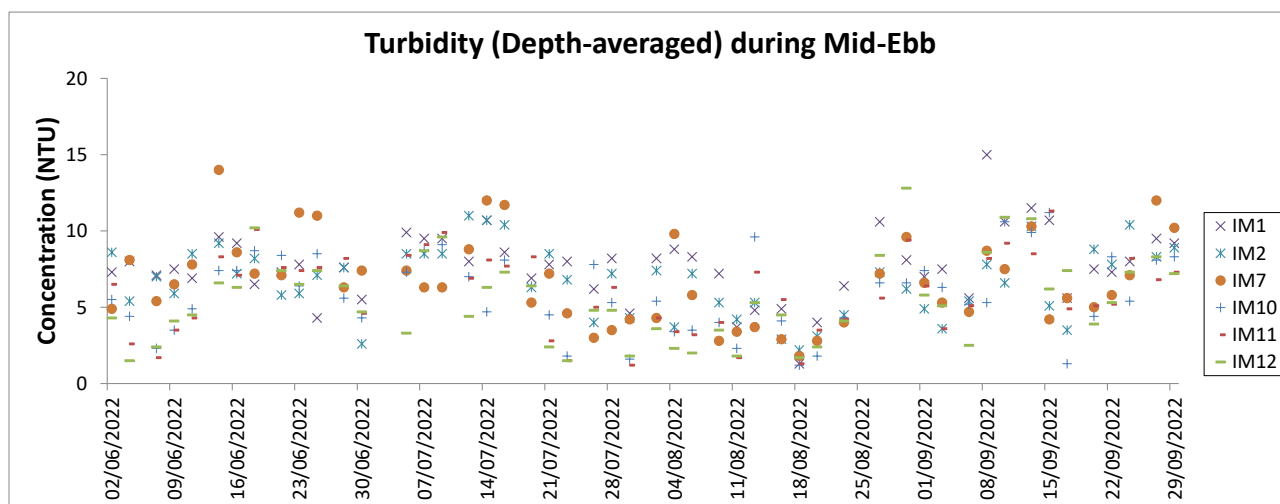
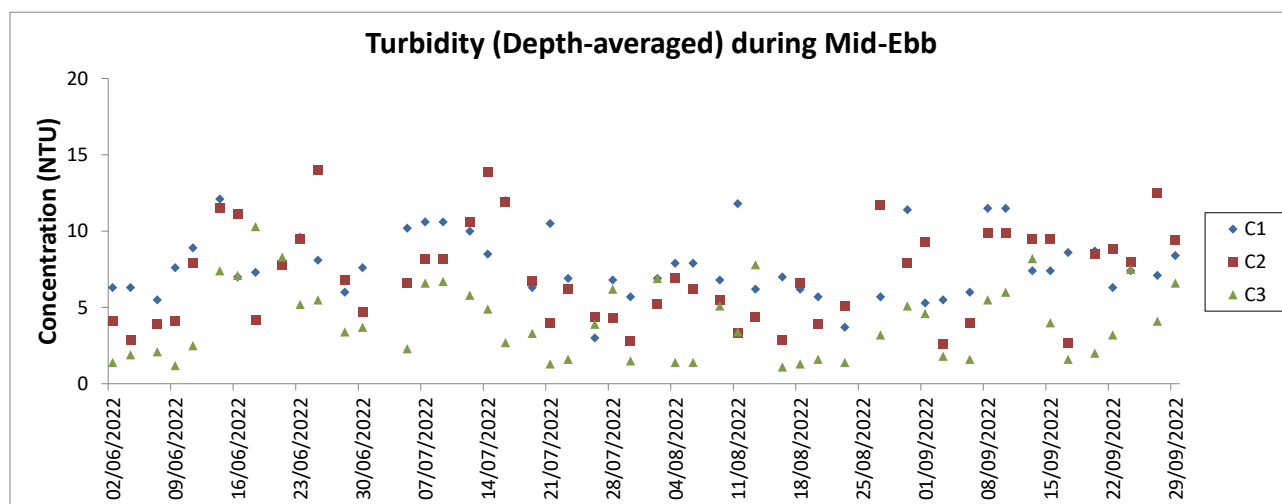
Notes:

1. The key marine works activities of the Project during monitoring included filling, seawall construction and ground improvement works, together with runway, taxiways, concourse and associated works.
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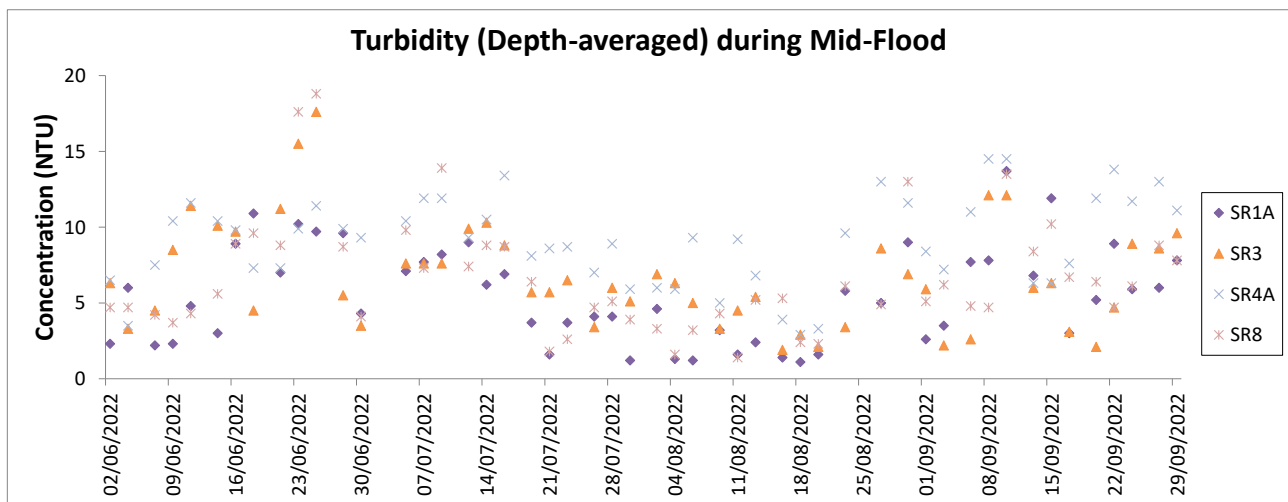
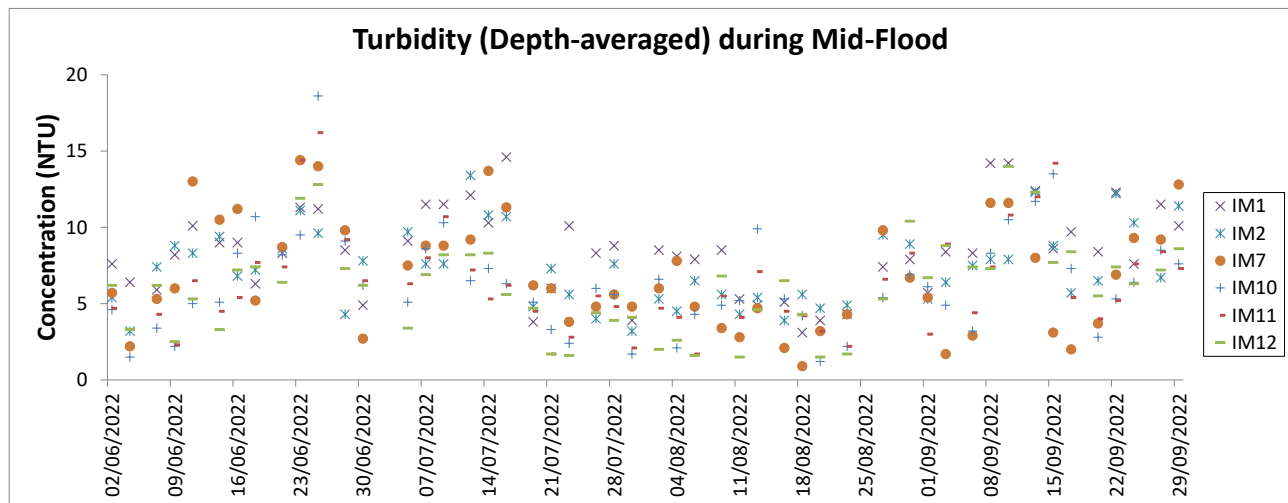
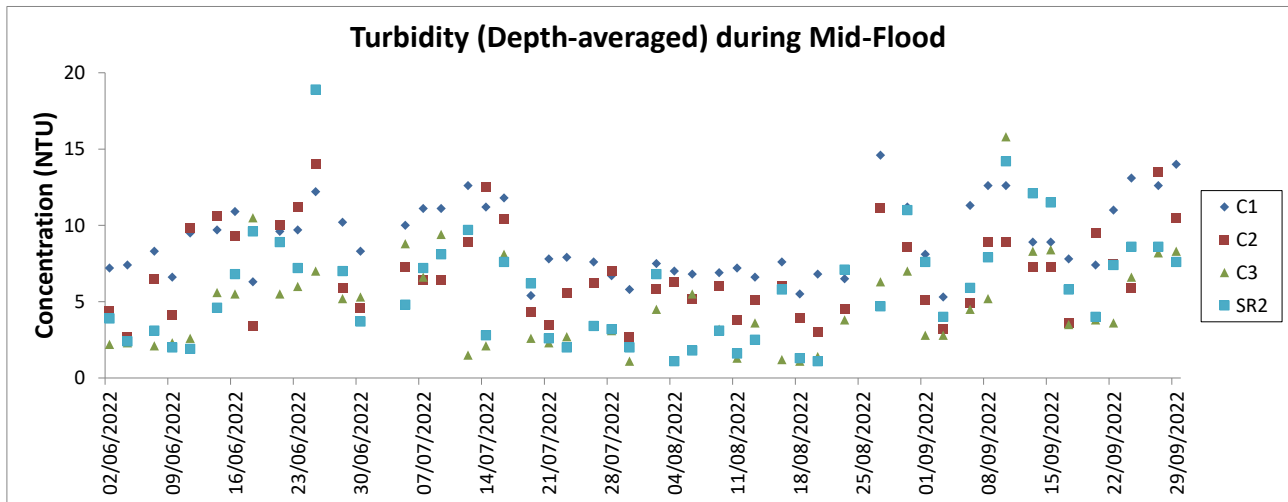
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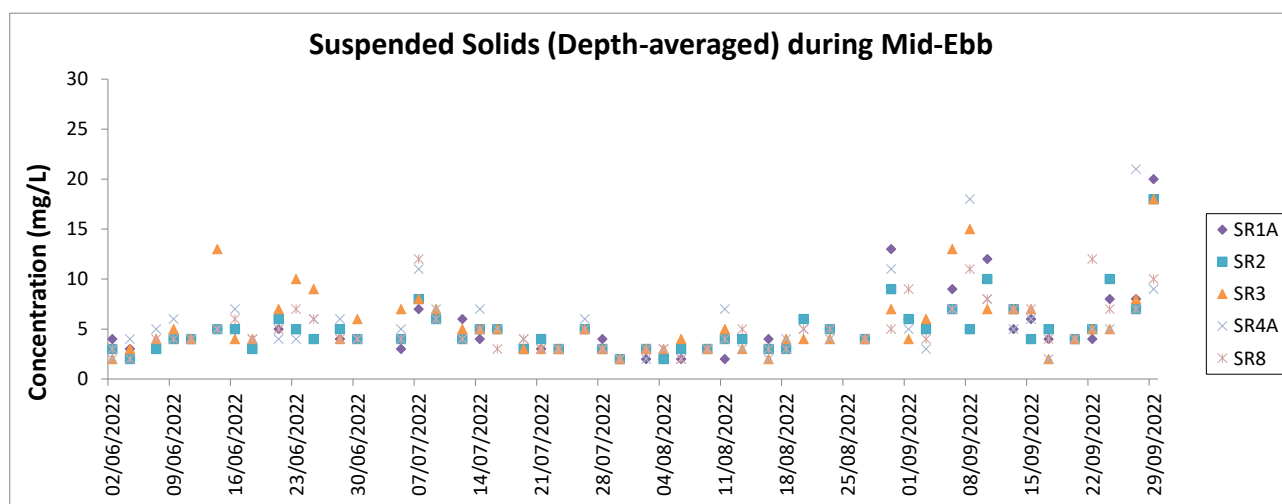
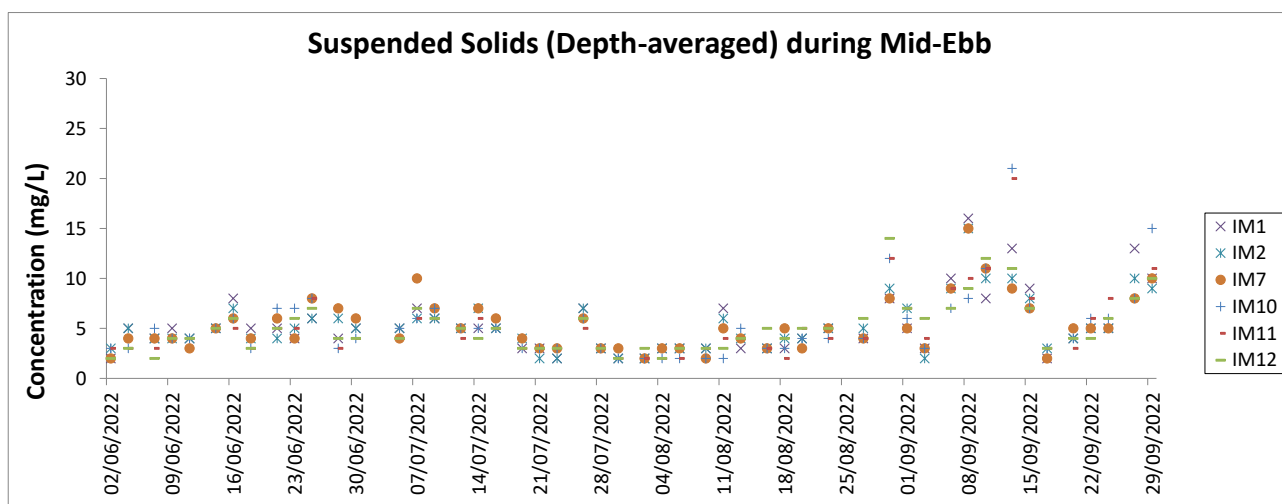
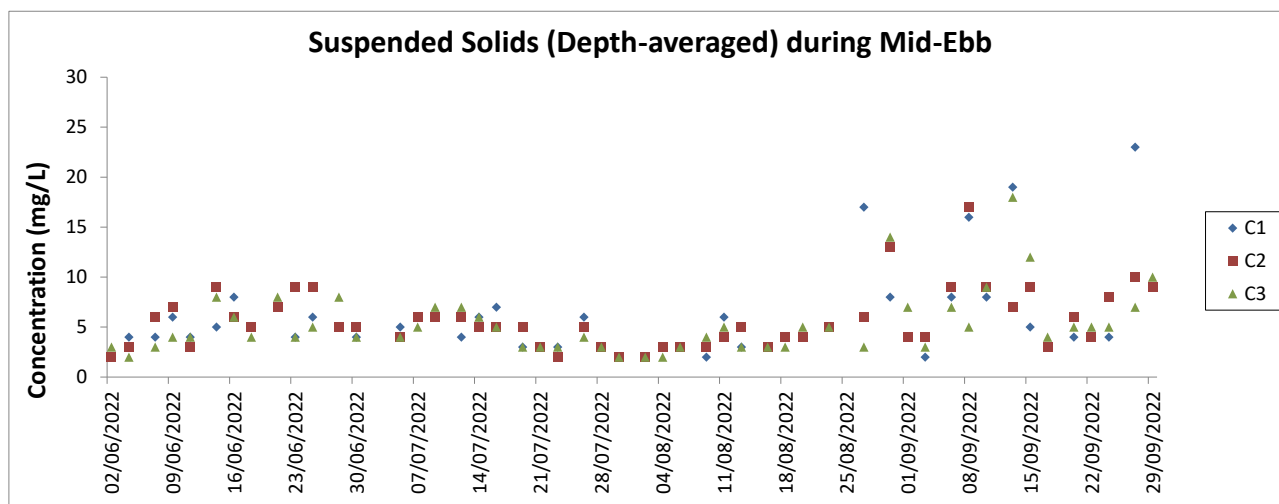
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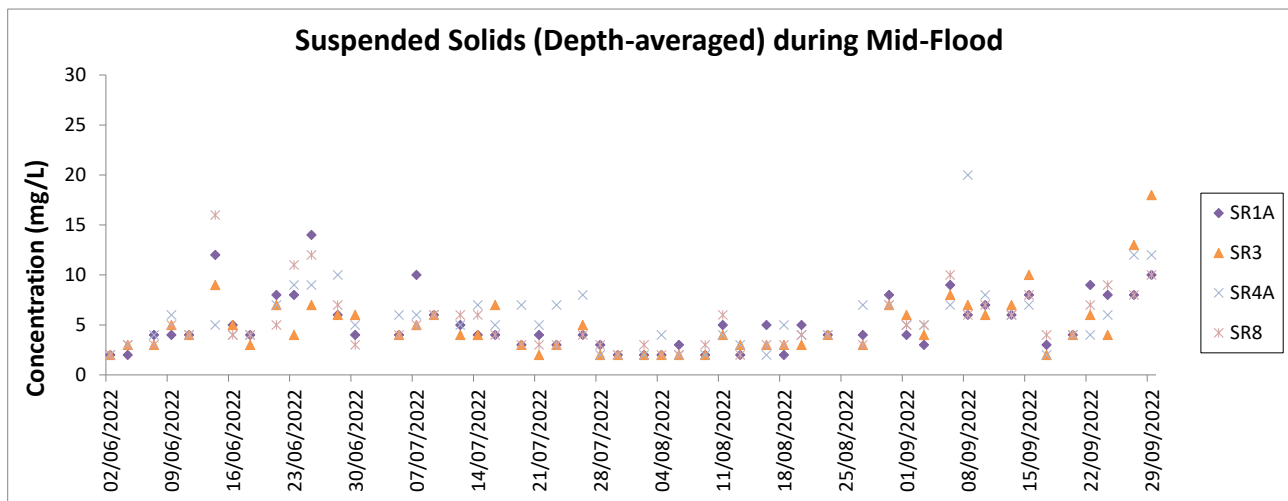
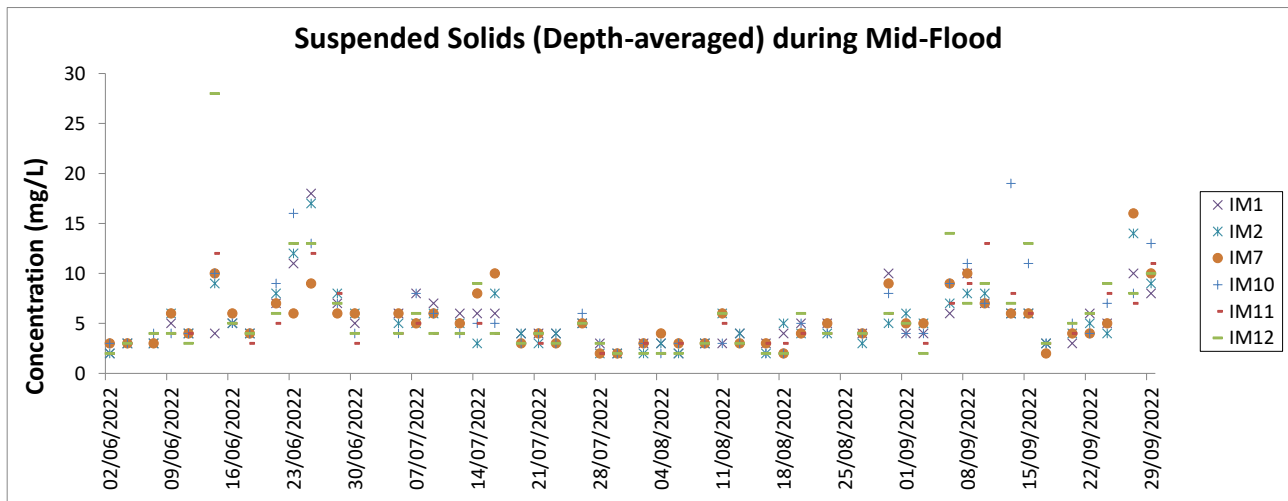
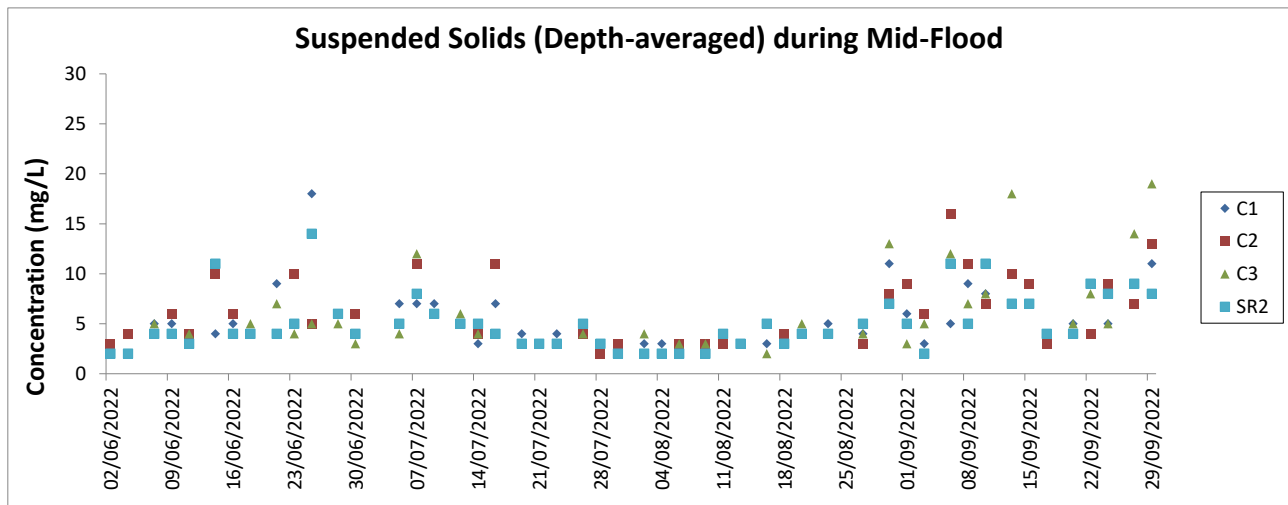
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Chinese White Dolphin Monitoring Results

CWD Small Vessel Line-transect Survey

Survey Effort Data

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
06-Jul-22	NEL	2	30.220	SUMMER	32166	3RS ET	P
06-Jul-22	NEL	3	6.900	SUMMER	32166	3RS ET	P
06-Jul-22	NEL	2	7.080	SUMMER	32166	3RS ET	S
06-Jul-22	NEL	3	3.200	SUMMER	32166	3RS ET	S
08-Jul-22	AW	2	4.940	SUMMER	32166	3RS ET	P
08-Jul-22	WL	2	8.670	SUMMER	32166	3RS ET	P
08-Jul-22	WL	3	9.126	SUMMER	32166	3RS ET	P
08-Jul-22	WL	4	1.270	SUMMER	32166	3RS ET	P
08-Jul-22	WL	2	3.690	SUMMER	32166	3RS ET	S
08-Jul-22	WL	3	3.935	SUMMER	32166	3RS ET	S
08-Jul-22	WL	4	2.300	SUMMER	32166	3RS ET	S
11-Jul-22	AW	2	5.010	SUMMER	32166	3RS ET	P
11-Jul-22	WL	2	11.940	SUMMER	32166	3RS ET	P
11-Jul-22	WL	3	5.332	SUMMER	32166	3RS ET	P
11-Jul-22	WL	2	5.710	SUMMER	32166	3RS ET	S
11-Jul-22	WL	3	4.068	SUMMER	32166	3RS ET	S
12-Jul-22	SWL	2	21.251	SUMMER	32166	3RS ET	P
12-Jul-22	SWL	3	22.070	SUMMER	32166	3RS ET	P
12-Jul-22	SWL	2	7.492	SUMMER	32166	3RS ET	S
12-Jul-22	SWL	3	5.587	SUMMER	32166	3RS ET	S
12-Jul-22	SWL	4	1.240	SUMMER	32166	3RS ET	S
13-Jul-22	SWL	2	41.213	SUMMER	32166	3RS ET	P
13-Jul-22	SWL	3	6.400	SUMMER	32166	3RS ET	P
13-Jul-22	SWL	2	13.895	SUMMER	32166	3RS ET	S
13-Jul-22	SWL	3	1.700	SUMMER	32166	3RS ET	S
15-Jul-22	NWL	2	51.300	SUMMER	32166	3RS ET	P
15-Jul-22	NWL	3	13.500	SUMMER	32166	3RS ET	P
15-Jul-22	NWL	2	9.600	SUMMER	32166	3RS ET	S
15-Jul-22	NWL	3	2.000	SUMMER	32166	3RS ET	S
19-Jul-22	NWL	2	34.900	SUMMER	32166	3RS ET	P
19-Jul-22	NWL	3	29.500	SUMMER	32166	3RS ET	P
19-Jul-22	NWL	2	5.700	SUMMER	32166	3RS ET	S
19-Jul-22	NWL	3	5.700	SUMMER	32166	3RS ET	S
25-Jul-22	NEL	2	32.950	SUMMER	32166	3RS ET	P
25-Jul-22	NEL	3	4.480	SUMMER	32166	3RS ET	P
25-Jul-22	NEL	2	8.410	SUMMER	32166	3RS ET	S
25-Jul-22	NEL	3	0.960	SUMMER	32166	3RS ET	S
02-Aug-22	SWL	1	1.000	SUMMER	32166	3RS ET	P
02-Aug-22	SWL	2	49.360	SUMMER	32166	3RS ET	P
02-Aug-22	SWL	1	0.900	SUMMER	32166	3RS ET	S
02-Aug-22	SWL	2	13.830	SUMMER	32166	3RS ET	S
03-Aug-22	SWL	2	37.908	SUMMER	32166	3RS ET	P
03-Aug-22	SWL	3	16.069	SUMMER	32166	3RS ET	P
03-Aug-22	SWL	2	13.392	SUMMER	32166	3RS ET	S
03-Aug-22	SWL	3	2.121	SUMMER	32166	3RS ET	S

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
05-Aug-22	NEL	2	32.840	SUMMER	32166	3RS ET	P
05-Aug-22	NEL	3	4.400	SUMMER	32166	3RS ET	P
05-Aug-22	NEL	2	9.760	SUMMER	32166	3RS ET	S
11-Aug-22	NEL	2	25.380	SUMMER	32166	3RS ET	P
11-Aug-22	NEL	3	11.030	SUMMER	32166	3RS ET	P
11-Aug-22	NEL	2	5.090	SUMMER	32166	3RS ET	S
11-Aug-22	NEL	3	5.300	SUMMER	32166	3RS ET	S
12-Aug-22	NWL	2	59.600	SUMMER	32166	3RS ET	P
12-Aug-22	NWL	3	4.100	SUMMER	32166	3RS ET	P
12-Aug-22	NWL	2	12.200	SUMMER	32166	3RS ET	S
16-Aug-22	NWL	1	2.500	SUMMER	32166	3RS ET	P
16-Aug-22	NWL	2	61.700	SUMMER	32166	3RS ET	P
16-Aug-22	NWL	1	1.000	SUMMER	32166	3RS ET	S
16-Aug-22	NWL	2	10.600	SUMMER	32166	3RS ET	S
22-Aug-22	AW	2	4.640	SUMMER	32166	3RS ET	P
22-Aug-22	WL	2	14.811	SUMMER	32166	3RS ET	P
22-Aug-22	WL	3	3.683	SUMMER	32166	3RS ET	P
22-Aug-22	WL	2	9.049	SUMMER	32166	3RS ET	S
22-Aug-22	WL	3	0.380	SUMMER	32166	3RS ET	S
23-Aug-22	WL	2	15.132	SUMMER	32166	3RS ET	P
23-Aug-22	WL	3	2.753	SUMMER	32166	3RS ET	P
23-Aug-22	WL	2	8.498	SUMMER	32166	3RS ET	S
23-Aug-22	WL	3	1.397	SUMMER	32166	3RS ET	S
23-Aug-22	AW	2	4.810	SUMMER	32166	3RS ET	P
05-Sep-22	NWL	2	4.260	AUTUMN	32166	3RS ET	P
05-Sep-22	NWL	3	59.410	AUTUMN	32166	3RS ET	P
05-Sep-22	NWL	3	11.830	AUTUMN	32166	3RS ET	S
06-Sep-22	SWL	2	32.266	AUTUMN	32166	3RS ET	P
06-Sep-22	SWL	3	14.290	AUTUMN	32166	3RS ET	P
06-Sep-22	SWL	4	4.930	AUTUMN	32166	3RS ET	P
06-Sep-22	SWL	2	9.989	AUTUMN	32166	3RS ET	S
06-Sep-22	SWL	3	3.100	AUTUMN	32166	3RS ET	S
06-Sep-22	SWL	4	1.060	AUTUMN	32166	3RS ET	S
08-Sep-22	NEL	2	37.420	AUTUMN	32166	3RS ET	P
08-Sep-22	NEL	2	9.580	AUTUMN	32166	3RS ET	S
09-Sep-22	NWL	2	60.720	AUTUMN	32166	3RS ET	P
09-Sep-22	NWL	2	12.700	AUTUMN	32166	3RS ET	S
14-Sep-22	SWL	2	39.365	AUTUMN	32166	3RS ET	P
14-Sep-22	SWL	3	14.270	AUTUMN	32166	3RS ET	P
14-Sep-22	SWL	2	8.365	AUTUMN	32166	3RS ET	S
14-Sep-22	SWL	3	7.270	AUTUMN	32166	3RS ET	S
19-Sep-22	AW	2	4.810	AUTUMN	32166	3RS ET	P
19-Sep-22	WL	2	15.142	AUTUMN	32166	3RS ET	P
19-Sep-22	WL	3	4.527	AUTUMN	32166	3RS ET	P
19-Sep-22	WL	2	7.648	AUTUMN	32166	3RS ET	S
19-Sep-22	WL	3	1.973	AUTUMN	32166	3RS ET	S
20-Sep-22	AW	3	4.890	AUTUMN	32166	3RS ET	P

DATE	AREA	BEAU	KM SEARCHED	SEASON	VESSEL	TYPE	P/S
20-Sep-22	WL	2	9.992	AUTUMN	32166	3RS ET	P
20-Sep-22	WL	3	7.720	AUTUMN	32166	3RS ET	P
20-Sep-22	WL	4	2.060	AUTUMN	32166	3RS ET	P
20-Sep-22	WL	2	7.128	AUTUMN	32166	3RS ET	S
20-Sep-22	WL	3	3.000	AUTUMN	32166	3RS ET	S
20-Sep-22	WL	4	1.100	AUTUMN	32166	3RS ET	S
21-Sep-22	NEL	2	1.300	AUTUMN	32166	3RS ET	P
21-Sep-22	NEL	3	29.290	AUTUMN	32166	3RS ET	P
21-Sep-22	NEL	4	7.080	AUTUMN	32166	3RS ET	P
21-Sep-22	NEL	3	8.100	AUTUMN	32166	3RS ET	S
21-Sep-22	NEL	4	0.930	AUTUMN	32166	3RS ET	S

CWD Small Vessel Line-transect Survey

Sighting Data

DATE	STG #	TIME	CWD/FP	GP SZ	AREA	BEAU	PSD	EFFORT	TYPE	DEC LAT	DEC LON	SEASON	BOAT ASSOC.	P/S
08-Jul-22	1	1100	CWD	1	WL	2	301	ON	3RS ET	22.2417	113.8435	SUMMER	NONE	P
08-Jul-22	2	1148	CWD	7	WL	3	46	ON	3RS ET	22.2152	113.8332	SUMMER	NONE	P
08-Jul-22	3	1209	CWD	3	WL	3	187	ON	3RS ET	22.2104	113.8392	SUMMER	NONE	S
08-Jul-22	4	1242	CWD	13	WL	3	747	ON	3RS ET	22.1956	113.8317	SUMMER	NONE	P
11-Jul-22	1	1037	CWD	5	WL	2	1040	ON	3RS ET	22.2603	113.8451	SUMMER	NONE	P
11-Jul-22	2	1135	CWD	6	WL	3	198	ON	3RS ET	22.2147	113.8204	SUMMER	NONE	S
11-Jul-22	3	1225	CWD	1	WL	3	48	ON	3RS ET	22.1964	113.8289	SUMMER	NONE	S
11-Jul-22	4	1258	CWD	5	WL	3	69	ON	3RS ET	22.1868	113.8383	SUMMER	NONE	P
12-Jul-22	1	1019	CWD	1	SWL	2	78	ON	3RS ET	22.2218	113.9360	SUMMER	PURSE SEINER	P
12-Jul-22	2	1034	CWD	4	SWL	2	2058	ON	3RS ET	22.2081	113.9362	SUMMER	PURSE SEINER	P
12-Jul-22	3	1157	CWD	5	SWL	2	155	ON	3RS ET	22.1945	113.9275	SUMMER	NONE	P
12-Jul-22	4	1220	CWD	3	SWL	2	161	ON	3RS ET	22.2054	113.9230	SUMMER	NONE	S
12-Jul-22	5	1241	CWD	1	SWL	2	N/A	OFF	3RS ET	22.2019	113.9177	SUMMER	NONE	P
12-Jul-22	6	1245	CWD	1	SWL	2	188	ON	3RS ET	22.1950	113.9180	SUMMER	NONE	P
12-Jul-22	7	1345	CWD	1	SWL	2	162	ON	3RS ET	22.1780	113.9049	SUMMER	NONE	S
12-Jul-22	8	1354	CWD	3	SWL	3	1211	ON	3RS ET	22.1789	113.9044	SUMMER	NONE	S
12-Jul-22	9	1425	CWD	1	SWL	2	131	ON	3RS ET	22.1976	113.8969	SUMMER	NONE	P
12-Jul-22	10	1440	CWD	1	SWL	2	48	ON	3RS ET	22.1891	113.8969	SUMMER	NONE	P
12-Jul-22	11	1518	CWD	1	SWL	3	173	ON	3RS ET	22.1612	113.8877	SUMMER	NONE	P
12-Jul-22	12	1537	CWD	3	SWL	3	136	ON	3RS ET	22.1871	113.8872	SUMMER	NONE	P
12-Jul-22	13	1604	CWD	2	SWL	2	809	ON	3RS ET	22.2025	113.8780	SUMMER	NONE	P
12-Jul-22	14	1626	CWD	1	SWL	2	255	ON	3RS ET	22.1867	113.8786	SUMMER	NONE	P
12-Jul-22	15	1650	CWD	1	SWL	3	193	ON	3RS ET	22.1642	113.8686	SUMMER	NONE	P
12-Jul-22	16	1705	CWD	1	SWL	3	29	ON	3RS ET	22.1702	113.8686	SUMMER	NONE	P
13-Jul-22	1	1037	FP	3	SWL	2	308	ON	3RS ET	22.1938	113.9367	SUMMER	NONE	P
13-Jul-22	2	1113	FP	4	SWL	2	93	ON	3RS ET	22.1658	113.9276	SUMMER	NONE	P
13-Jul-22	3	1231	CWD	1	SWL	2	141	ON	3RS ET	22.1811	113.9037	SUMMER	NONE	S
13-Jul-22	4	1254	CWD	5	SWL	2	216	ON	3RS ET	22.1973	113.9083	SUMMER	PURSE SEINER	P
13-Jul-22	5	1332	CWD	1	SWL	2	173	ON	3RS ET	22.1813	113.8982	SUMMER	NONE	P
13-Jul-22	6	1350	CWD	4	SWL	2	402	ON	3RS ET	22.1746	113.8972	SUMMER	NONE	P
13-Jul-22	7	1445	CWD	2	SWL	2	161	ON	3RS ET	22.1859	113.8879	SUMMER	NONE	P

DATE	STG #	TIME	CWD/FP	GP SZ	AREA	BEAU	PSD	EFFORT	TYPE	DEC LAT	DEC LON	SEASON	BOAT ASSOC.	P/S
13-Jul-22	8	1547	CWD	2	SWL	2	52	ON	3RS ET	22.1617	113.8699	SUMMER	NONE	S
13-Jul-22	9	1610	CWD	1	SWL	2	277	ON	3RS ET	22.1933	113.8677	SUMMER	NONE	P
13-Jul-22	10	1651	CWD	1	SWL	2	89	ON	3RS ET	22.1874	113.8492	SUMMER	NONE	P
02-Aug-22	1	1432	CWD	2	SWL	2	59	ON	3RS ET	22.1841	113.8680	SUMMER	NONE	P
02-Aug-22	2	1507	CWD	15	SWL	2	80	ON	3RS ET	22.1795	113.8497	SUMMER	PURSE SEINER	P
03-Aug-22	1	1311	FP	1	SWL	3	61	ON	3RS ET	22.1528	113.8974	SUMMER	NONE	P
03-Aug-22	2	1433	CWD	4	SWL	2	194	ON	3RS ET	22.1988	113.8683	SUMMER	NONE	P
03-Aug-22	3	1522	CWD	1	SWL	2	21	ON	3RS ET	22.1893	113.8493	SUMMER	NONE	P
22-Aug-22	1	1039	CWD	1	WL	2	42	ON	3RS ET	22.2615	113.8551	SUMMER	NONE	S
22-Aug-22	2	1125	CWD	3	WL	2	345	ON	3RS ET	22.2418	113.8320	SUMMER	NONE	P
22-Aug-22	3	1136	CWD	1	WL	2	10	ON	3RS ET	22.2418	113.8295	SUMMER	NONE	P
22-Aug-22	4	1212	CWD	4	WL	2	19	ON	3RS ET	22.2144	113.8309	SUMMER	NONE	P
22-Aug-22	5	1246	CWD	3	WL	2	313	ON	3RS ET	22.2007	113.8245	SUMMER	NONE	S
22-Aug-22	6	1312	CWD	1	WL	3	11	ON	3RS ET	22.1869	113.8327	SUMMER	NONE	P
23-Aug-22	1	1118	CWD	3	WL	2	98	ON	3RS ET	22.2326	113.8360	SUMMER	NONE	P
23-Aug-22	2	1141	CWD	8	WL	2	416	ON	3RS ET	22.2226	113.8353	SUMMER	NONE	P
23-Aug-22	3	1206	CWD	1	WL	2	40	ON	3RS ET	22.2141	113.8262	SUMMER	NONE	P
23-Aug-22	4	1226	CWD	1	WL	2	1368	ON	3RS ET	22.2059	113.8236	SUMMER	NONE	P
23-Aug-22	5	1242	CWD	9	WL	2	363	ON	3RS ET	22.1956	113.8350	SUMMER	NONE	P
23-Aug-22	6	1317	CWD	9	WL	3	251	ON	3RS ET	22.1873	113.8356	SUMMER	NONE	P
06-Sep-22	1	1028	FP	3	SWL	2	143	ON	3RS ET	22.2171	113.9358	AUTUMN	NONE	P
06-Sep-22	2	1036	FP	2	SWL	2	275	ON	3RS ET	22.2029	113.9361	AUTUMN	NONE	P
06-Sep-22	3	1039	FP	5	SWL	2	370	ON	3RS ET	22.1981	113.9363	AUTUMN	NONE	P
06-Sep-22	4	1046	FP	14	SWL	2	235	ON	3RS ET	22.1842	113.9364	AUTUMN	NONE	P
06-Sep-22	5	1048	FP	5	SWL	2	157	ON	3RS ET	22.1828	113.9364	AUTUMN	NONE	P
06-Sep-22	6	1056	FP	1	SWL	2	147	ON	3RS ET	22.1686	113.9358	AUTUMN	NONE	P
06-Sep-22	7	1100	FP	2	SWL	2	137	ON	3RS ET	22.1624	113.9360	AUTUMN	NONE	P
06-Sep-22	8	1103	FP	3	SWL	2	22	ON	3RS ET	22.1594	113.9357	AUTUMN	NONE	P
06-Sep-22	9	1120	CWD	2	SWL	2	113	ON	3RS ET	22.1563	113.9275	AUTUMN	NONE	P
06-Sep-22	10	1135	FP	9	SWL	2	32	ON	3RS ET	22.1707	113.9277	AUTUMN	NONE	P
06-Sep-22	11	1137	FP	12	SWL	2	551	ON	3RS ET	22.1725	113.9287	AUTUMN	NONE	P
06-Sep-22	12	1158	CWD	4	SWL	2	1022	ON	3RS ET	22.2000	113.9173	AUTUMN	NONE	P
06-Sep-22	13	1225	FP	1	SWL	2	72	ON	3RS ET	22.1715	113.9190	AUTUMN	NONE	P

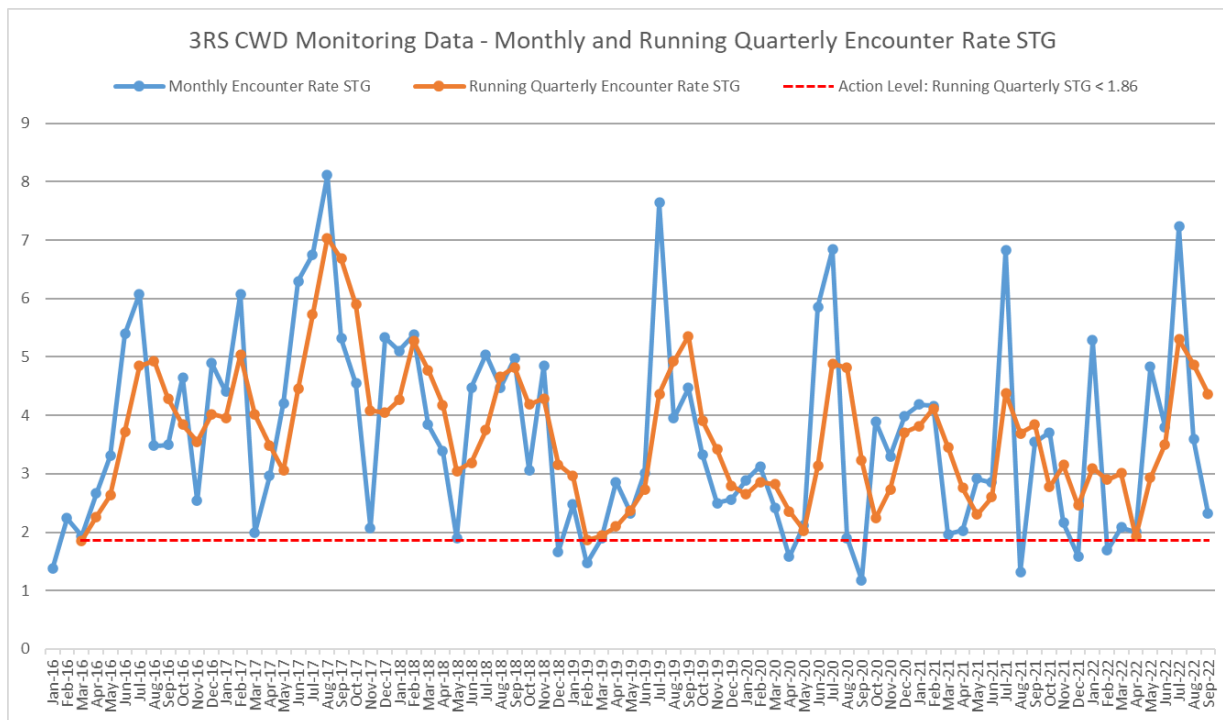
DATE	STG #	TIME	CWD/FP	GP SZ	AREA	BEAU	PSD	EFFORT	TYPE	DEC LAT	DEC LON	SEASON	BOAT ASSOC.	P/S
06-Sep-22	14	1248	FP	3	SWL	2	127	ON	3RS ET	22.1508	113.9081	AUTUMN	NONE	P
06-Sep-22	15	1309	CWD	6	SWL	2	741	ON	3RS ET	22.1637	113.9039	AUTUMN	NONE	S
06-Sep-22	16	1431	CWD	1	SWL	2	114	ON	3RS ET	22.1980	113.8879	AUTUMN	NONE	P
09-Sep-22	1	0952	CWD	1	NWL	2	569	ON	3RS ET	22.3771	113.8701	AUTUMN	NONE	P
09-Sep-22	2	1205	CWD	2	NWL	2	1048	ON	3RS ET	22.3862	113.8881	AUTUMN	NONE	P
14-Sep-22	1	1056	FP	5	SWL	2	270	ON	3RS ET	22.1846	113.9354	AUTUMN	NONE	P
14-Sep-22	2	1110	FP	2	SWL	2	179	ON	3RS ET	22.1548	113.9356	AUTUMN	NONE	P
14-Sep-22	3	1126	FP	1	SWL	2	125	ON	3RS ET	22.1641	113.9281	AUTUMN	NONE	P
14-Sep-22	4	1152	FP	2	SWL	2	111	ON	3RS ET	22.1946	113.9177	AUTUMN	NONE	P
14-Sep-22	5	1227	FP	3	SWL	3	5	ON	3RS ET	22.1541	113.9063	AUTUMN	NONE	P
19-Sep-22	1	1043	CWD	4	WL	2	233	ON	3RS ET	22.2606	113.8419	AUTUMN	NONE	P
19-Sep-22	2	1157	CWD	5	WL	3	386	ON	3RS ET	22.2045	113.8357	AUTUMN	NONE	P
19-Sep-22	3	1230	CWD	5	WL	3	308	ON	3RS ET	22.1957	113.8343	AUTUMN	NONE	P
20-Sep-22	1	1054	CWD	2	WL	2	505	ON	3RS ET	22.2502	113.8471	AUTUMN	NONE	P

Abbreviations: STG# = Sighting Number; GP SZ = Group Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance (in metres); N/A = Not Applicable;
 DEC LAT = Latitude (WGS84 in Decimal), DEC LON = Longitude (WGS84 in Decimal); BOAT ASSOC. = Fishing Boat Association; P/S = Primary Transect / Secondary Transect.

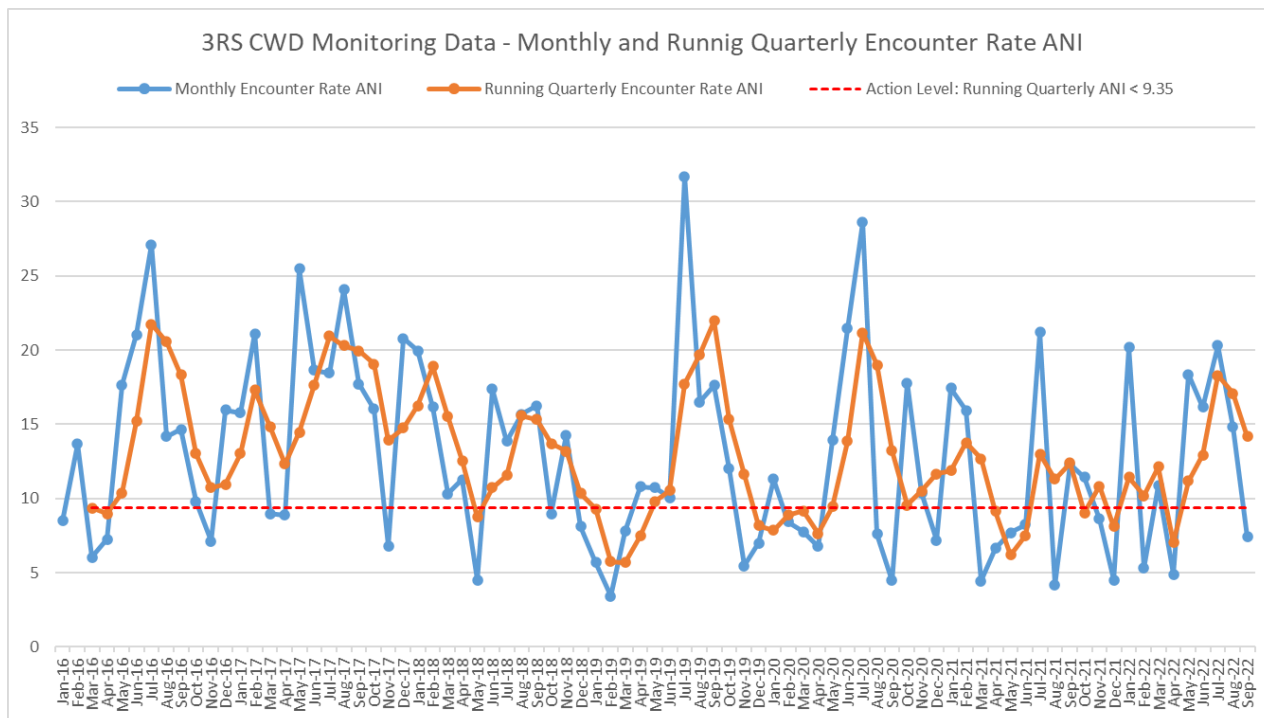
Sighting data of finless porpoise (FP) are presented for reference only. No relevant figure or text will be mentioned in the quarterly EM&A report. All FP sightings are excluded in calculation.

Graphical Presentation of Monthly and Running Quarterly Encounter Rates for the entire monitoring period

Encounter Rate STG:











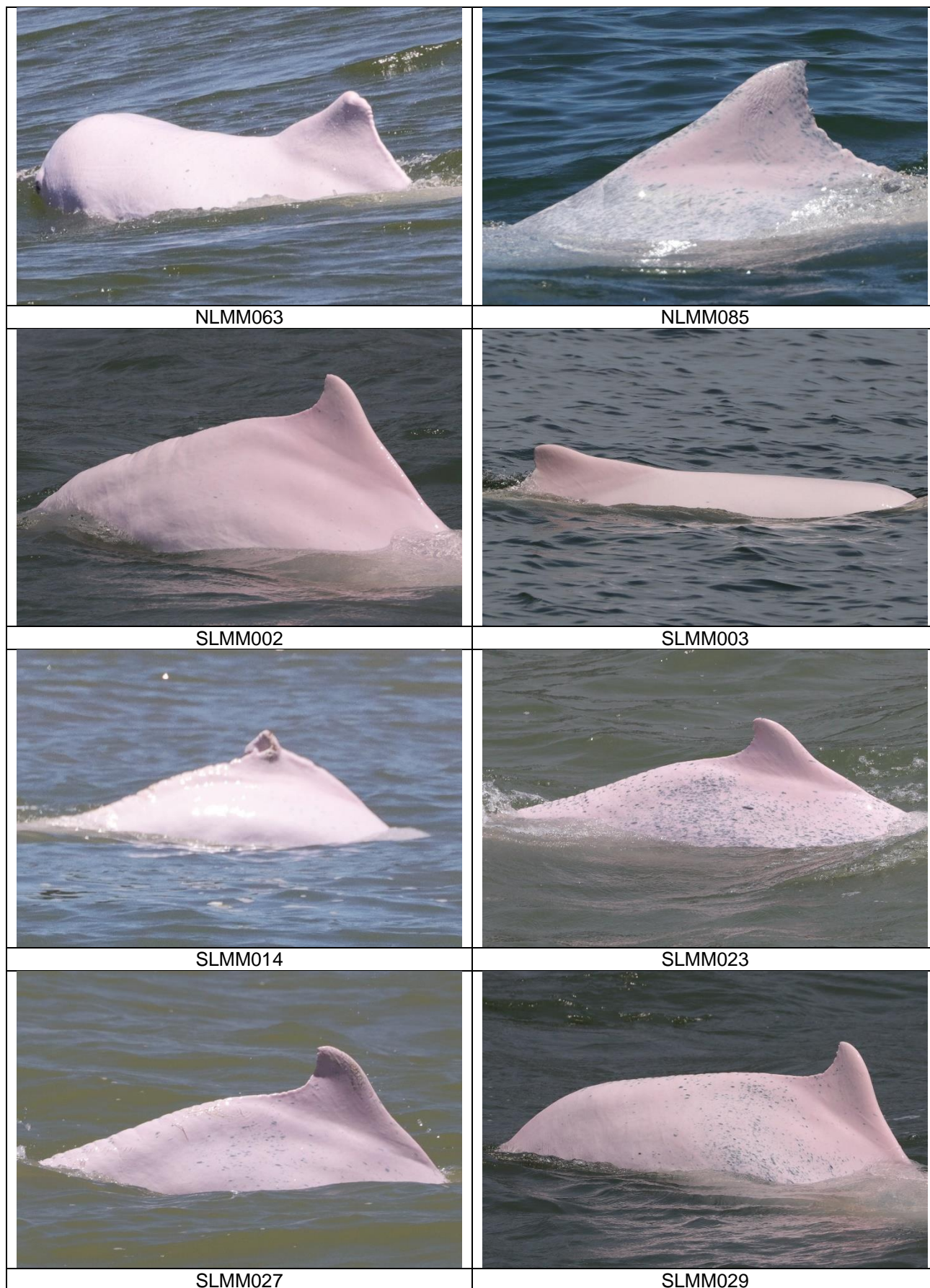
Encounter Rate ANI:











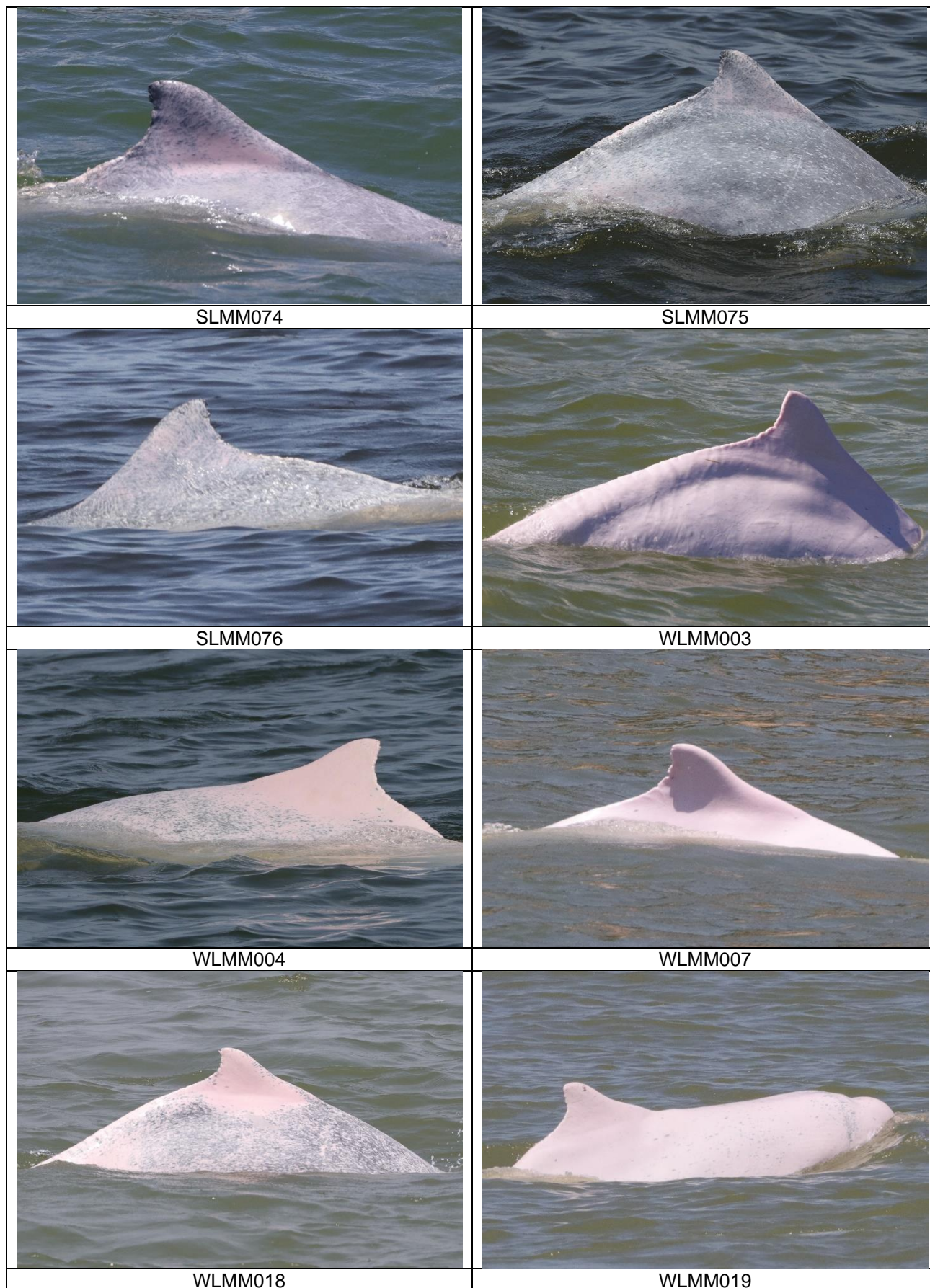
CWD Small Vessel Line-transect Survey

Photo Identification

	
NLMM013	NLMM015
	
NLMM016	NLMM028
	
NLMM039	NLMM040
	
NLMM058	NLMM061



	
SLMM035	SLMM037
	
SLMM044	SLMM049
	
SLMM050	SLMM052
	
SLMM059	SLMM060





WLMM029



WLMM038



WLMM043



WLMM047



WLMM049



WLMM052



WLMM056



WLMM063



WLMM067



WLMM076



WLMM079



WLMM081



WLMM083











WLMM092



WLMM109



WLMM114

	
WLMM131	WLMM135
	
WLMM151	WLMM164
	
WLMM176 (Lower)	WLMM177
	
WLMM178	WLMM179


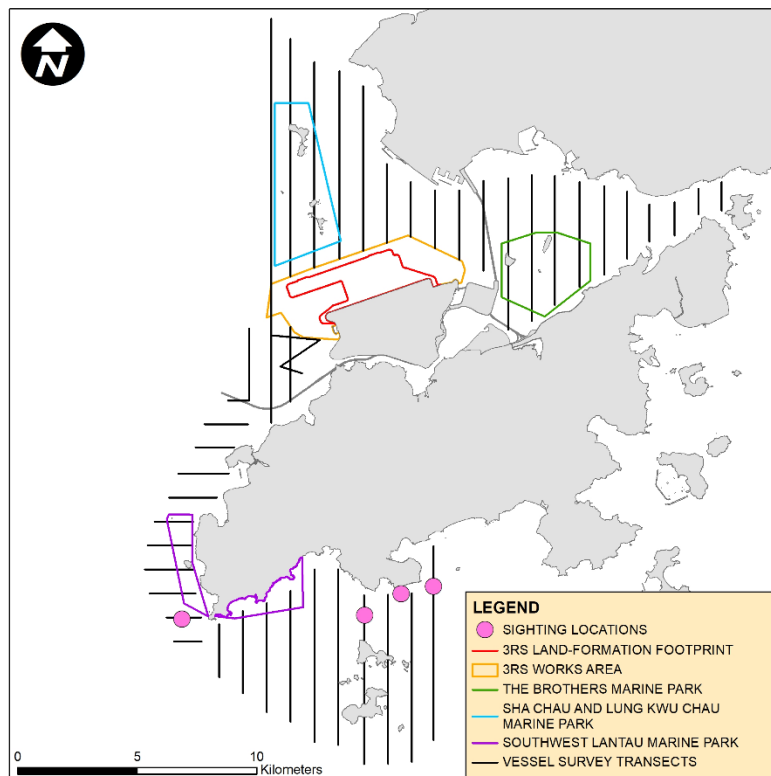
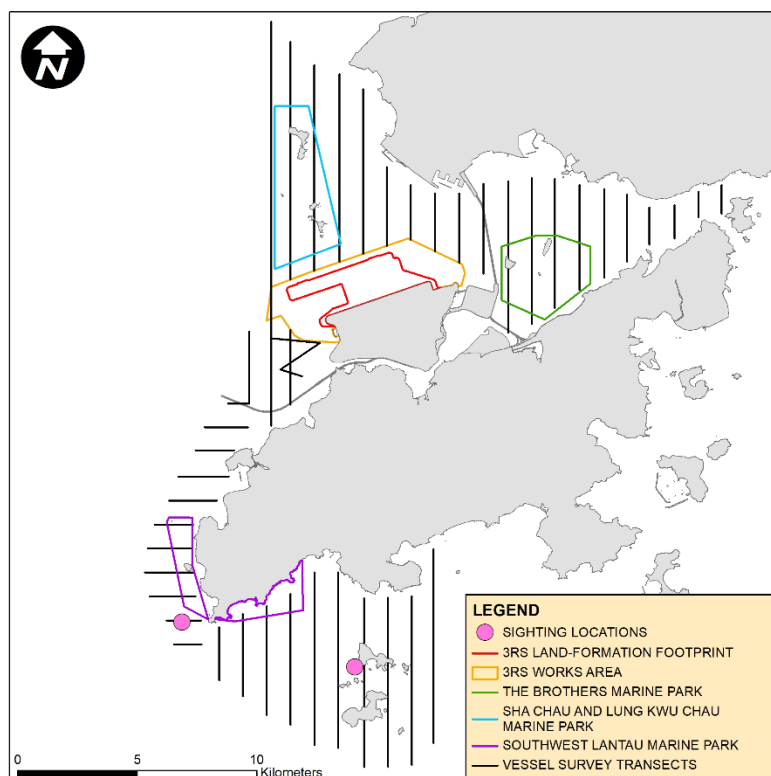
	
WLMM180	

Photo Identification – Re-sighting Locations

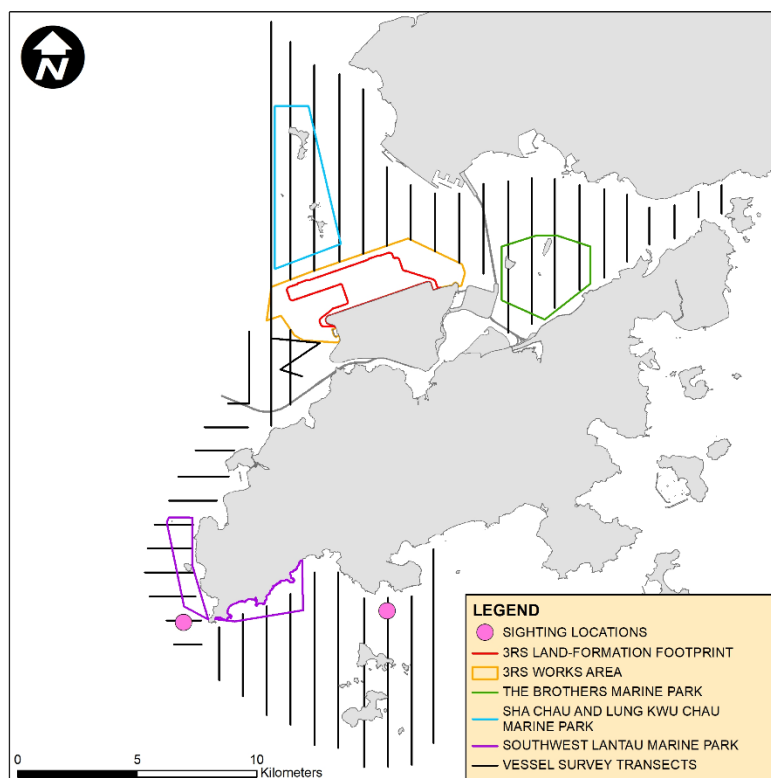
SLMM002



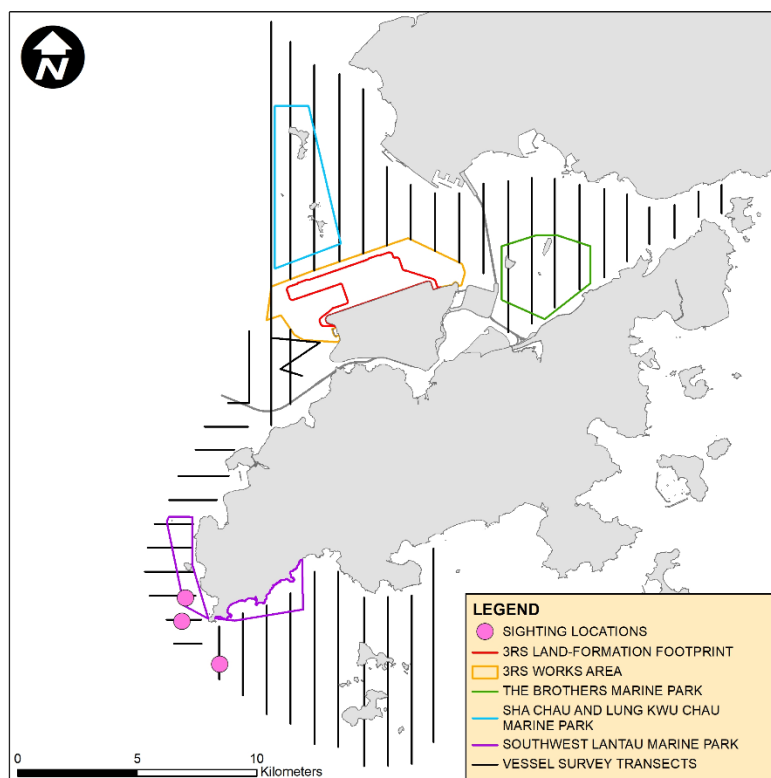
SLMM029



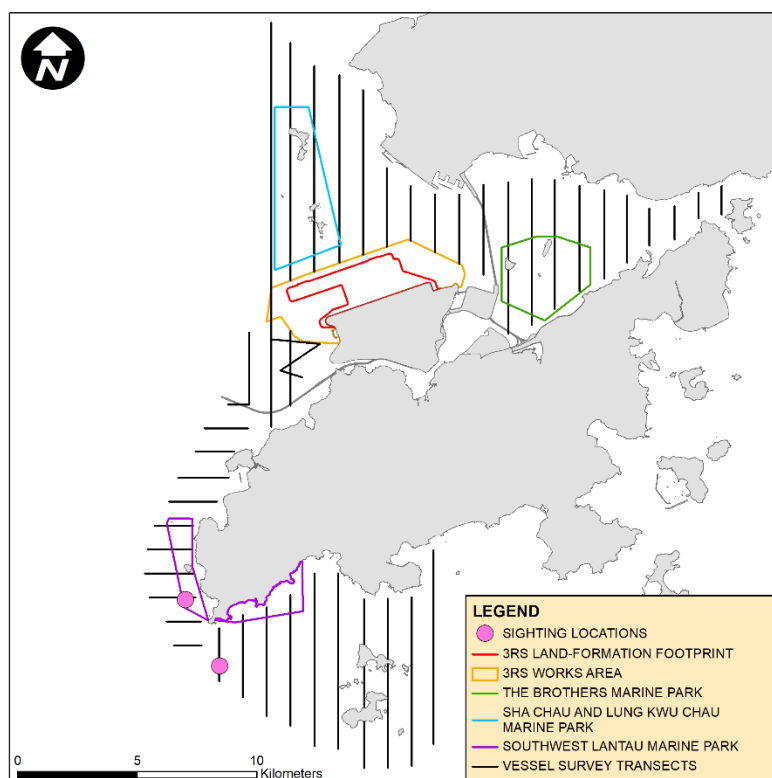
SLMM035



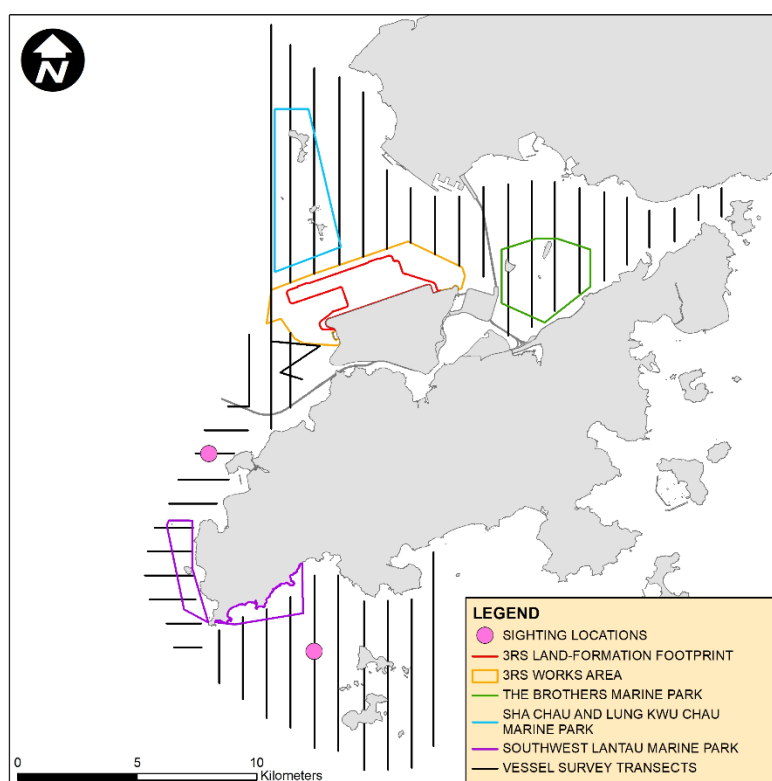
SLMM044



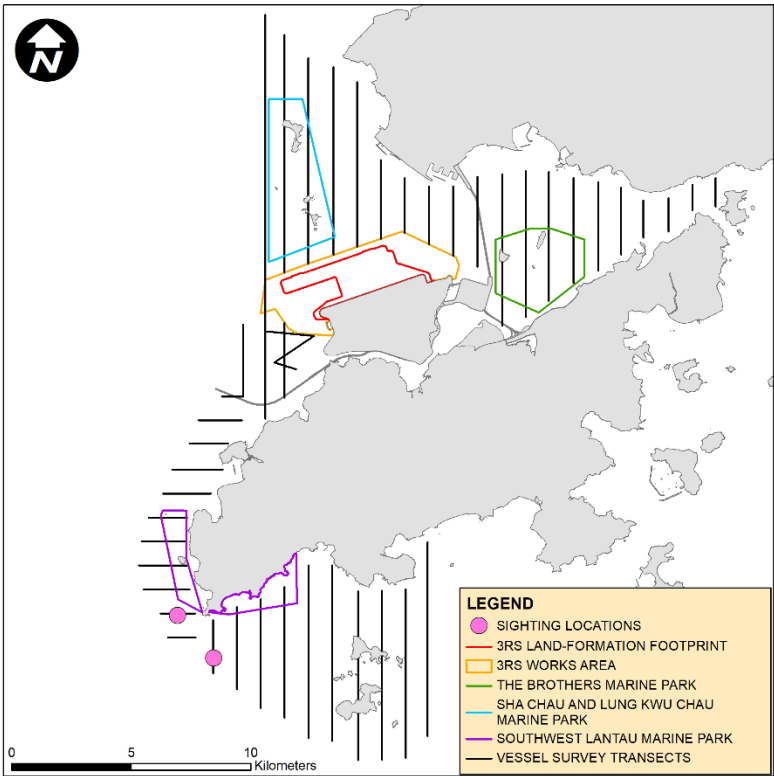
SLMM049



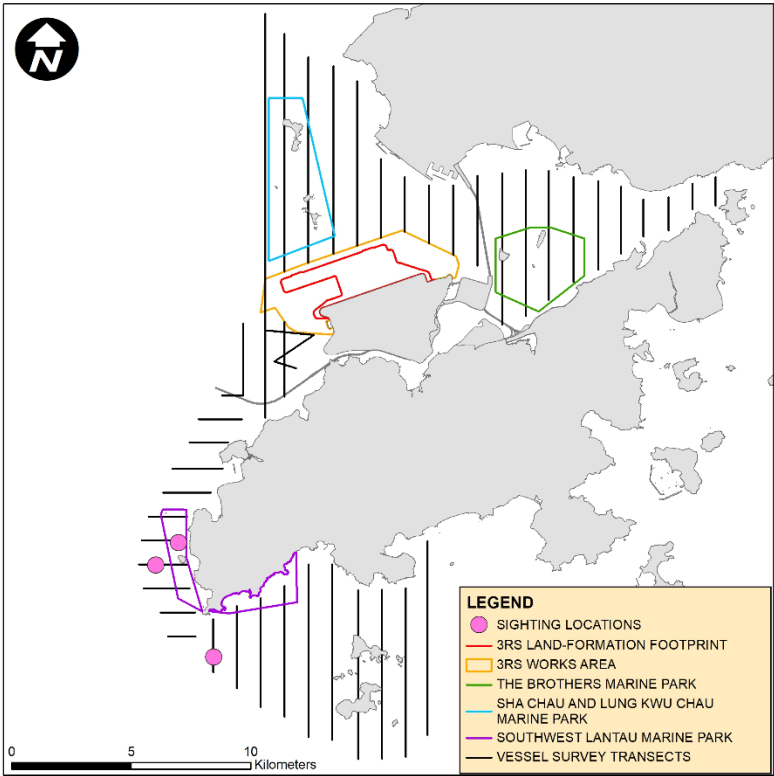
WLMM003



WLMM063



WLMM067



CWD Land-based Theodolite Tracking**CWD Groups by Survey Date**

Date	Station	Start Time	End Time	Duration	Beaufort Range	Visibility	No. of Focal Follow Dolphin Groups Tracked	Dolphin Group Size Range
18-Jul-22	Lung Kwu Chau	8:55	14:55	6:00	2-3	2	0	-
19-Jul-22	Sha Chau	10:40	16:40	6:00	3	2	0	-
22-Aug-22	Sha Chau	10:59	16:59	6:00	2-3	2	0	-
29-Aug-02	Lung Kwu Chau	8:48	14:48	6:00	2	3	0	-
16-Sep-22	Lung Kwu Chau	9:00	14:00	6:00	2	4	0	-
21-Sep-22	Sha Chau	10:35	16:35	6:00	2-3	2-3	0	-

Visibility: 1=Excellent, 2=Good, 3=Fair, 4=Poor

**Daily Flow Monitoring Record of Sewage
Pumping Station 1 (SPS1)**

Daily Flow Monitoring Record of Sewage Pumping Station 1 (SPS1)

Date	Daily Flow at SPS1 (in m³/day)
01-Jul-22	18,982
02-Jul-22	18,757
03-Jul-22	15,949
04-Jul-22	16,399
05-Jul-22	14,602
06-Jul-22	14,489
07-Jul-22	14,714
08-Jul-22	14,939
09-Jul-22	13,254
10-Jul-22	10,558
11-Jul-22	17,410
12-Jul-22	18,308
13-Jul-22	15,163
14-Jul-22	11,457
15-Jul-22	14,152
16-Jul-22	13,478
17-Jul-22	13,591
18-Jul-22	14,489
19-Jul-22	15,612
20-Jul-22	15,612
21-Jul-22	14,602
22-Jul-22	14,826
23-Jul-22	13,366
24-Jul-22	13,478
25-Jul-22	13,703
26-Jul-22	14,939
27-Jul-22	13,478
28-Jul-22	13,029
29-Jul-22	13,815
30-Jul-22	16,736
31-Jul-22	12,692
Jul - 22 Daily Avg	14,728

Daily Flow Monitoring Record of Sewage Pumping Station 1 (SPS1)

Date	Daily Flow at SPS1 (in m³/day)
01-Aug-22	13,815
02-Aug-22	15,500
03-Aug-22	15,725
04-Aug-22	15,500
05-Aug-22	14,265
06-Aug-22	12,243
07-Aug-22	12,917
08-Aug-22	14,377
09-Aug-22	13,478
10-Aug-22	17,185
11-Aug-22	17,073
12-Aug-22	13,478
13-Aug-22	17,634
14-Aug-22	14,714
15-Aug-22	17,971
16-Aug-22	16,062
17-Aug-22	14,826
18-Aug-22	14,748
19-Aug-22	16,477
20-Aug-22	17,073
21-Aug-22	18,196
22-Aug-22	20,442
23-Aug-22	16,623
24-Aug-22	11,232
25-Aug-22	11,681
26-Aug-22	15,051
27-Aug-22	15,612
28-Aug-22	12,917
29-Aug-22	14,377
30-Aug-22	13,815
31-Aug-22	13,591
Aug - 22 Daily Avg	15,116

Daily Flow Monitoring Record of Sewage Pumping Station 1 (SPS1)

Date	Daily Flow at SPS1 (in m³/day)
01-Sep-22	12,355
02-Sep-22	13,366
03-Sep-22	9,435
04-Sep-22	12,018
05-Sep-22	10,895
06-Sep-22	5,841
07-Sep-22	13,254
08-Sep-22	14,377
09-Sep-22	14,714
10-Sep-22	12,468
11-Sep-22	12,243
12-Sep-22	12,018
13-Sep-22	11,681
14-Sep-22	14,826
15-Sep-22	14,377
16-Sep-22	12,804
17-Sep-22	10,895
18-Sep-22	11,232
19-Sep-22	11,906
20-Sep-22	14,040
21-Sep-22	14,939
22-Sep-22	10,670
23-Sep-22	12,804
24-Sep-22	11,007
25-Sep-22	14,265
26-Sep-22	10,895
27-Sep-22	12,131
28-Sep-22	12,692
29-Sep-22	12,692
30-Sep-22	10,109
Sep - 22 Daily Avg	12,232

